TOOLKIT ON INTEGRATING DIGITAL FINANCIAL SERVICES

into Feed the Future Programs

USAID
FROM THE AMERICAN PEOPLE

FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

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INTRODUCTION

WHY SHOULD WE CARE ABOUT DIGITAL FINANCIAL SERVICES?

Smallholder farming provides livelihoods for over 2 billion people around the world. The World Bank predicts the food market in Africa will reach US $1 trillion in demand by 2030, a US $700 billion increase from the current level of demand.[1] Smallholder farmers, who currently produce 80% of food consumed by people in Africa and Asia, will continue to play a large role in meeting that massive growth in demand. Evidence also shows that larger agricultural businesses are increasingly relying on smallholders to meet crop production targets, indicating that demand for smallholder production will continue to rise over the near to medium term.[2]

Taken together, these figures suggest a significant opportunity for a wide array of service providers to tap into one of the largest market segments in the world. Yet, smallholders' household needs for a range of products and services remain largely unmet. This is particularly true when it comes to financial services. There is currently a US $150 billion credit gap for smallholder farmers in the regions of South and Southeast Asia, Sub-Saharan Africa, and Latin America[3], and insurance products reach only 13% of all smallholders worldwide with much of that coverage concentrated in India and China, driven by public sector policies that support large government index insurance products.[4]

SO, WHAT CAN BE DONE TO HELP CLOSE THESE FINANCIAL SERVICE GAPS?

Digital financial services (DFS) are defined by the Alliance for Financial Inclusion as "the broad range of financial services accessed and delivered through digital channels, including payments, credit, savings, remittances and insurance."[5] The integration of new digital channels for transactions, information flows and data capture, and identity verification are shifting models for delivering financial services.

Feed the Future programs around the world should consider how to use these new digital channels to strengthen agricultural systems and improve smallholder livelihoods.

The tools found within this publication are meant to help Feed the Future implementers partners explore where they can leverage one type of DFS product, mobile money, to deliver relevant and useful financial services to smallholders and value chain partners they work with. Access to these financial

1 AGRA https://agra.org/wp-content/uploads/2017/09/Final-AASR-2017-Aug-28.pdf vi
2 IFC 2014, Vaena and Gaeaneotes, 2014, reference found in Anderson Cuevas paper
3 https://www.raflearning.org/sites/default/files/inflection_point_april_2016.pdf?token=OS8hc14U
4 http://www.cgap.org/blog/digital-innovations-smallholder-agricultural-insurance
5 https://www.afi-global.org/sites/default/files/publications/2016-08/Guideline%20Note-19%20DFS-Terminology.pdf

services can, in turn, contribute to greater self-reliance within rural communities by strengthening the inclusiveness of agricultural systems, improving the resilience of food production systems, and boost income earning potential of smallholders.

DFS INTEGRATION TOOLS FOR MULTIPLE USES

This is a set of four tools meant to support the integration of mobile money into Feed the Future programming. These tools were developed as an extension of USAID's 2016 Guide to the Use of DFS in Agriculture. Whereas that guide was intended to support USAID Mission staff and Feed the Future implementers in undertaking phased assessments to determine the feasibility of integrating DFS offerings in agricultural development activities, the toolkit assumes DFS integration is feasible and focuses on topics and issues related to designing and implementing specific activities within a Feed the Future context.

The tools are the result of an 18-month engagement carried out by Strategic Impact Advisors (SIA) and NetHope, with support from USAID. SIA and NetHope entered into collaborative arrangements with two Feed the Future activities in Uganda: the Alur Highlands Coffee Alliance (AHCA), implemented by Palladium, and Youth Leadership in Agriculture (YLA), implemented by Chemonics. **The work sought to explore where DFS could be leveraged to improve the livelihoods of smallholder households and the value chain partners that work with them.**

THE FOUR TOOLS:

Quantitative and Qualitative Survey Tool to Assess DFS Integration Potential

Establish a baseline understanding of smallholder farmers' access to and use of mobile phones and financial services, while also establishing clarity on household expenditure/income and transactional patterns (agricultural and non-agricultural).

Payments Mapping & Costing Assessment

Generate a visual representation of how a business processes specific types of payments and how much it costs to make those payments by identifying what the key steps are, who is involved, when they occur, and over what period.

DFS Rural Stimulation Campaign

Develop the capacity and confidence of rural, agricultural audiences to use DFS by demonstrating, through storytelling presentation, group activity, and simulations, how these products work and why they have value in everyday life.

Measuring DFS Integration Impact on GFSS Objectives

Provide examples of key performance metrics Feed the Future programs can use to measure the impact of DFS integration into their programs while also providing guidance on how to link those metrics to broader Global Food Security Strategy (GFSS) Objectives on economic growth and resilience.

WRITTEN FOR USAID IMPLEMENTING PARTNERS AND MISSION STAFF

This toolkit was developed for two primary audiences:

1. Implementing partners of USAID Feed the Future and other agricultural programs
2. USAID Mission personnel

We understand that Feed the Future programs cover a wide variety of strategic objectives, so this toolkit is likely not relevant to every activity or even every component of an activity's work plan. Therefore, this toolkit speaks to specific segments within each audience. Further, Feed the Future implementers may find that only certain tools in this toolkit are appropriate for them. This will largely depend on their engagement orientation, which is described in greater detail below.

USAID Implementing Partners

This toolkit focuses on implementing partners that primarily engage the private sector and non-profit/non-governmental actors at a micro- or meso-level. Specifically, the toolkit targets Feed the Future implementing partners that work with farming populations via a lead farmer group or local association/cooperative organizing principle and agri-enterprises engaged in supplying goods and services (e.g. inputs) to or sourcing, processing, and distributing outputs from farmers. These implementers typically possess a mandate to build awareness or capacity of individuals, groups, or organizations to adopt new practices, processes, or systems to strengthen production or operating performance.

USAID Mission Personnel

This toolkit is primarily intended for use by USAID Mission personnel responsible for Feed the Future program creation and management. It provides specific examples of what kinds of DFS intervention activities can be integrated at different points in the program lifecycle, depending on desired purpose or effect.

"HOW TO'S" BASED ON COLLABORATION AND DIRECT MARKET EXPERIENCE

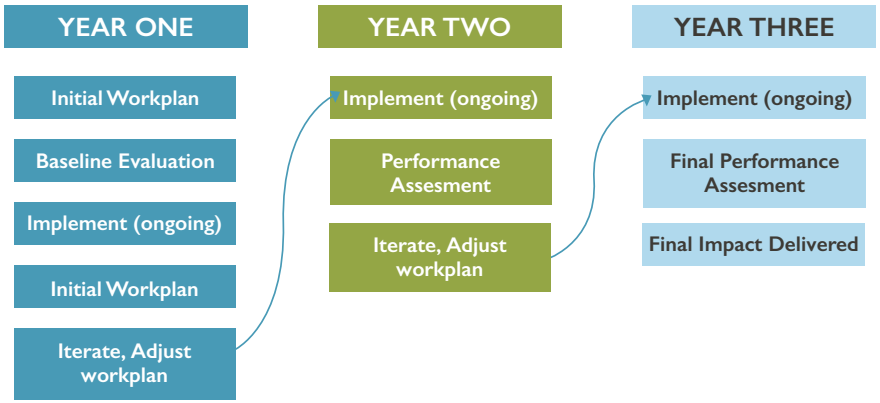
Assuming the preliminary assessment identifies opportunities to use DFS in a given country and market context, the toolkit helps identify how a Feed the Future team within a particular Mission might implement these opportunities and how seizing them contributes to broader strategic priorities. As per the Global Food Security Strategy (GFSS) FY 2017-2021 and the three interdependent objectives it identifies, Missions and implementing partners should actively consider how best to leverage appropriate digital solutions, with an emphasis on DFS offerings.6

These tools provide concrete "How To's" to support Feed the Future implementers with program planning and design, implementation and management, as well as monitoring and evaluation of DFS integration activities in a rural agricultural context. These examples are also meant to support Mission personnel charged with management and oversight of Feed the Future programming.

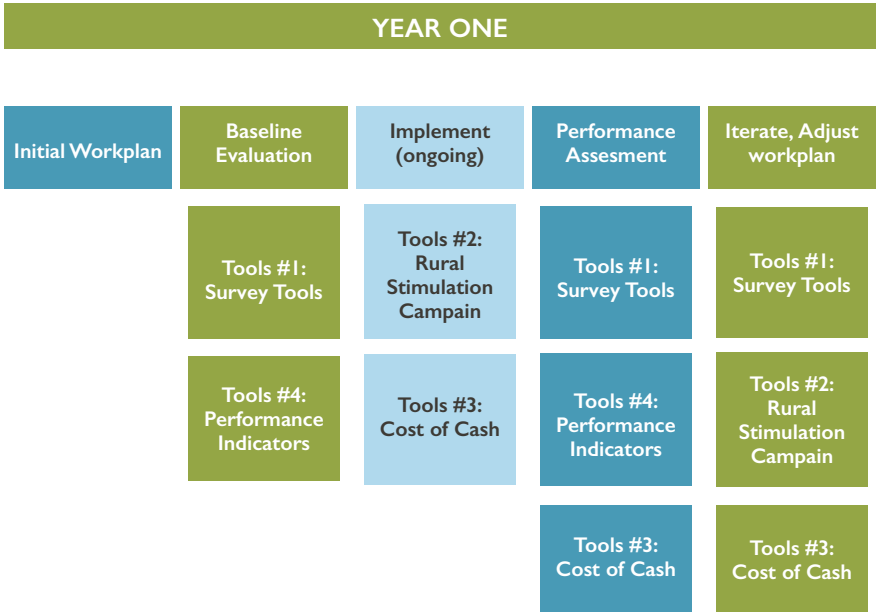
6 The strategy recognizes them as proven tools for building resilience in rural populations, especially women, to withstand external shocks. Additionally, the use of DFS offerings such as mobile money are cited as worthy of programmatic investment to expand access to formal financial services, such as savings, and alternatives to making education or utility payments (i.e. energy or water, increasingly via a pay-as-you-go PAYG model).

APPLICABLE AT DIFFERENT STAGES IN A FEED THE FUTURE ACTIVITY

The below is a mock three-year activity implementation period for a Feed the Future activity. This is meant to be an illustrative example of when these tools should be used within your program cycle, so it may not reflect your program's



Taking a look at year one, each tool has a role to play in multiple phases throughout the year. Tools 1 and 4 are more important during baseline and then monitoring performance of the program, while tools 2 and 3 are more focused on implementation but can also support iteration and adjustments made to the work plan.



In years two and three, there are similar patterns to where the tools might be used. To reiterate, these are suggestions. **Many of these tools can be used during any point of an activity.** For example, the work done with AHCA in northern Uganda started in its fifth and final year. It is never too late to start exploring how DFS can have a positive impact on your program's outcomes.

TOOL #1: ASSESSING SMALLHOLDER READINESS FOR DFS

OBJECTIVES

This tool presents quantitative and qualitative methods to identify activity patterns, preferences, and perceptions among smallholders to inform decision-making around how to leverage DFS to better serve their needs. Specifically, it will help Feed the Future activities better understand the following topics that relate to DFS readiness:

Household expenditures

Household income

Specific household lighting/energy consumption

Farmer transaction patterns (agricultural and non-agricultural)

Farmer usage of mobile technology

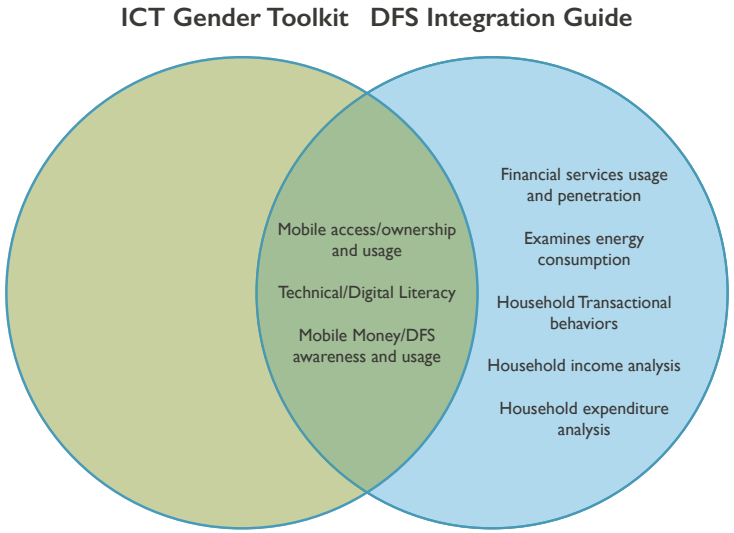
Farmer usage of financial services

Farmer usage of mobile money (if available in country context)

BACKGROUND AND IMPETUS

Feed the Future programs collect a wide variety of information on both smallholders and agri-value chain partners. **Yet, when it comes to helping inform decisions around how best to leverage DFS, data collection often falls short.** Topics such as mobile phone ownership, network coverage, financial account penetration, or payment patterns are frequently not included. This tool is meant to supplement routine monitoring and evaluation carried out by Feed the Future activities to make informed decisions on 1) whether or not digital channels, especially mobile, are viable means to reaching smallholders in a given zone of influence (ZOI) and 2) if viable, what types of mobile services should be utilized and which smallholder pain points could they address. By expanding the definition of financial services beyond credit, this tool also helps Feed the Future activities develop a more holistic approach to access to finance that take accounts for a households' agricultural and non-agricultural activities.

It should also be noted that the Gender and ICT Survey Toolkit7, which provides resources for assessing women's access to ICT and integrating this and other relevant information into program design, can also be very useful in the smallholder context. The below highlights the modules within this survey tool that are also covered in the Gender and ICT Toolkit vs. those which are not.



7 https://www.usaid.gov/sites/default/files/documents/15396/Gender_and_ICT_Toolkit.pdf

DESIGN & KEY ELEMENTS

This tool is designed for Feed the Future activities that have direct engagement with smallholders. Agricultural development programs that work directly with, and are responsible for collecting information from smallholders for baselines and assessments can integrate this survey into their data collection efforts. The survey can also be used to improve agricultural value chain partners' understanding of how to use DFS to improve operational efficiencies.

While it provides both quantitative survey and qualitative focus group discussion resources, it is in no way required for an implementing partner to do both. These resources should be used in a way that best fits a program's objectives. Survey and focus group question sets are made available in Microsoft Word, so they can be edited, and copy/pasted into other documents being used by a program. For example, it is not necessary to collect data on all 78 questions listed in the quantitative survey. The question sets found within the templates below should be considered as a menu that can be drawn from as needed to supplement existing monitoring and evaluation activity.

In Northern Uganda, two Feed the Future activities piloted the quantitative survey. The first activity, Alur Highlands Coffee Alliance (AHCA), had a network of lead farmers and extension agents called Junior Agricultural Field Officers (JAFO). They worked with coffee buyers, but also had smallholder facing activities. The second activity, Youth Leadership in Agriculture (YLA), works primarily through value chain actors, namely agri-enterprises, that maintain formal or semi-formal ties to networks of smallholders. The quantitative survey was conducted with the support of AHCA and YLA, which helped organize smallholders given their ongoing relationships.

CONSIDERATION #1:
Quantitative Survey Structure

The quantitative survey has 78 questions broken up into ten sections. It is recommended that activities be selective and integrate the most relevant modules into their monitoring and evaluation exercises. All survey resources are easily editable with standard word processing or spreadsheet programs. The table below identifies each of the sections, provides a brief description, and lists potential insights.

Section Name	Description	Potential Insights
General Information	Respondent information such as name, age, gender	Demographic data can be tracked and survey data can be organized by age and gender
Crop Cycle	Types of crops the smallholder is growing	Informs when larger transactions may occur both for input purchases and output selling.
Household Expenditures	Detailed breakdown of household expenditures	Which outgoing payment streams might be digitized
Lighting & Energy Consumption	Household energy consumption, particularly around solar energy products	Pricing and penetration of solar products and the viability of these systems as a DFS use case
Household Income	Agricultural and non-agricultural household income streams	Appropriateness of credit and savings products.
Crop Sales Transaction Patterns	Where and when smallholders are paid for their crops	Whether crop selling patterns represent an opportunity to introduce digital payments
Mobile Technology	Mobile phone ownership and usage	Whether smallholders own or have access to phones and how they use them
Formal & Informal Financial Services	Formal account ownership (bank, MFI, SAACO, cooperative), participation in informal services such as savings groups, and how financial services are used by smallholders	What financial tools are already being used by smallholders and what other financial services are still needed
Mobile Money	Mobile money account ownership and usage	Types of transactions that smallholder households use mobile money for, which provides insights into the level of mobile money penetration and awareness
Willingness to use mobile money for certain transactions	Willingness of smallholder households to use mobile money for a variety of agricultural and non-agricultural transactions	Where smallholders are willing to try mobile money can inform capacity building activities and more efficient ways to encourage service providers to engage smallholders as potential clients.

QUANTITATIVE SURVEY TEMPLATE:

Here is a **link** to the survey question sets in Word and Excel format (ODK form builder compatible)

QUANTITATIVE SURVEY DATABASE TEMPLATE:

Here is a **link** to the data entry and management database template. It provides question definitions and name abbreviations.

CONSIDERATION #2:
Data Protection

There are basic concepts of data protection that are important to consider when collecting and sharing data on smallholder farmers. Users of this survey tool are encouraged to refer to the Considerations for Using Data Responsibly at USAID resource for extensive definitions and examples on the topic of data protection. The following are some basic definitions relevant to data protection in the context of the quantitative survey.

Data Protection Law: USAID implementing partners should be aware of data protection laws, especially if they are working in multiple countries, and be sure to follow USAID guidance, local regulation, and best practices to ensure the most appropriate level of protection for any given context.

Privacy by Design: This concept emphasizes the need to ensure that privacy and data protection are not afterthoughts, but rather built into an organization or program's processes and procedures.

Informed Consent: This is defined as disclosing sufficient information about direct risks and benefits to participants so they can make an informed decision on whether to participate, making sure participants truly understands this information, and making sure the decision to participate is truly voluntary.

CONSIDERATION #3:
Qualitative Focus Group Discussion Structure

To supplement the data gathered from the quantitative survey, it is recommended to conduct focus group discussions (FGDs) with a select group of smallholders. In the Uganda test case, many of the smallholders belonged to village savings and loans groups (VSLAs), which served as a natural way to organize focus groups. The questions for the focus groups therefore treat interactions with VSLAs but could apply to any formal or informal financial product used by the group of smallholders being interviewed.

The FGD questions are arranged into five broad discussion topics as defined in the table below.

Section Name	Description	Potential Insights
Awareness, Access & Use of Financial Services (Formal & Informal)	Examines the group's usage of formal (e.g. bank) and informal (e.g. VSLA) products	Key barriers to broader access to financial services and where digital channels could be applied
Current Patterns of Growing, Harvesting & Selling Crops / Households Finances	Input purchase habits, borrowing needs, and household money management	Where additional financial services (i.e credit) may be needed
Awareness, Access & Usage of Mobile Technology	Who owns mobile phones and how they use them day-to-day	Digital literacy rates inform viability of a mobile-based financial product
Alternate Methods for Keeping Records, Collecting Deposits & Accessing Loans	Willingness to use digital channels for activities such as receiving and repaying loans	How open or closed-minded a group is to the idea of using their mobile phone for a variety of new services and uses
Solar Alternatives to Energy Consumption Needs (Awareness, Access, Usage, Perception)	Energy consumption, solar energy usage, and broader energy needs	Experiences, awareness and usage of solar energy

FOCUS GROUP DISCUSSION TEMPLATE:

Here is a **link** to the guidance and question sets for focus group discussions. The template includes several sections, which can be easily edited. For example, there is an emphasis on VSLA group participation and activity as this was one method used in Uganda to organize and engage smallholders.

PREPARATION: SURVEY ENUMERATION TRAINING TIPS

The below highlights a few tips that will help improve implementation of the survey.

1. It is important to establish a clear understanding of the survey's overall purpose and objective with enumerators.

2. The question set should be reviewed with the enumerators as a group first and allow time for an internal debrief and deeper discussion of each question. The more complicated questions to enumerate are typically the open-ended ones that do not have multiple choice answers. **Questions found in sections 2, 3, 5 and question 6.9 and 10.12 are ones to be mindful of when planning for enumerator training.**

3. Enumerators should take turns walking through and filling out the survey with a fellow enumerator partner. This helps enumerators become more accustomed to delivering the survey, but also allows for them to provide feedback on how questions are worded and delivered.

4. **If possible, do a dry run of the survey with a small group of smallholders** to further refine how the questions are posed and make the enumerator more comfortable prompting for responses and responding to questions.

5. Feedback loops between survey managers and enumerators should be frequency and well-maintained to ensure respondent comprehension of questions remains high.

6. As this survey can become rather long, it's important to **prioritize those sections and questions that are most aligned with your activity.** For example, there is a section on energy consumption. But if this is not related to your activity's focus or mandate, you should omit it and cut down on the time needed to enumerate the survey in the field.

While a majority of quantitative survey questions are straightforward multiple choice, there are more open-ended questions. This may require further explanation and attention during enumerator training. An example of this is question 5.2, which focuses on non-crop related household income. Enumerators will need to be mindful of the unit of measurement that resonates best with the smallholder. **The question asks about income that they have earned over the past year from non-agricultural sources. Smallholders may not be able to provide what the last year' amount is worth but may be more comfortable providing an estimate of daily or weekly income. It will be the enumerators' responsibility to identify how many weeks or days the smallholder worked over the last year to get to a number that is accurate and reflective of income brought in during that time frame.**

EXECUTION: ANALYSIS GUIDANCE & EXAMPLES FROM UGANDA

Each section of the quantitative survey and the complementing qualitative FGDs will generate insights that can inform Feed the Future activity design and identify where DFS has the potential to be useful for smallholders. Below are some examples of key quantitative survey outcomes.

Section: Household Expenditures

Data points to look out for: While all household expenditure is important, the top five merit follow-up questions (either through survey or with FGDs) to determine the frequency and typical recipient (i.e. a school, or local grocery).

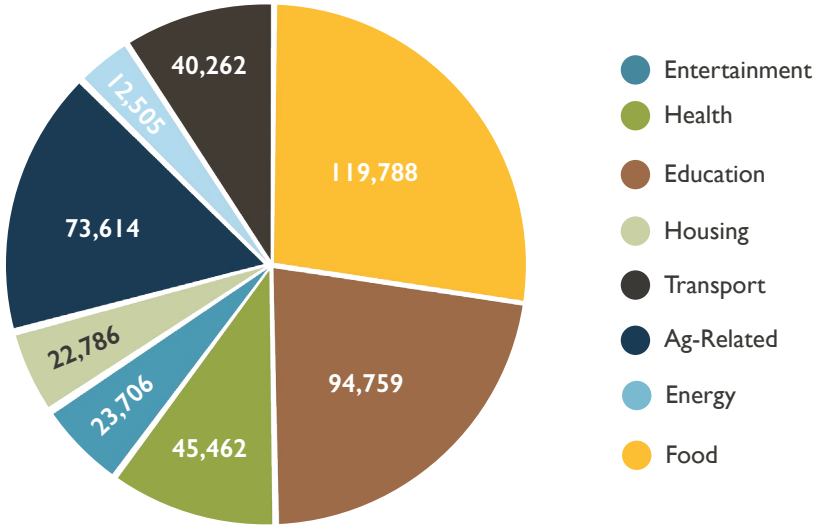
Relevance to DFS implementation: By better understanding what smallholder households spend their money on, and where these expenditures are going, a program can explore opportunities to digitize these transactions. **Expanding smallholder use cases for digital payments, including mobile money, can make receiving payments digitally less painful for them,** as they

have more ways to use money in digital wallets and less reason to find an agent with whom they can cash out.

Uganda Example: In the Uganda case study, some of the larger expenditures were transport, health and education. These are more predictable and cyclical payments, making them easier to digitize (particularly school fee payments).

1.1 Reported Monthly Expenditures

Monthly Expenditures per Household per Cateogy (in UGX)



Transport:

- Farmers ride regularly but not for faily commuting, amounts are small and often negotiated in advance
- Transactions are quick but take place in exposed settings
- Farmers rely on multiple drivers, most would need to accept mobile money

Education

- Amounts are large, cash is transported at farmer's risk
- Payment collection points are often far away
- Process can be very lengthy or costly for farmers
- No more than 3 payments per year, schedule is known in advance, and paper documentation is required

Health

- Public health services are free but quality can be poor, rural centers not easy or inexpensive to access
- Informal providers are closer and do require payment, not always in cash though
- Visits are rarely scheduled or known in advance, cash availabily can be recurring challenge

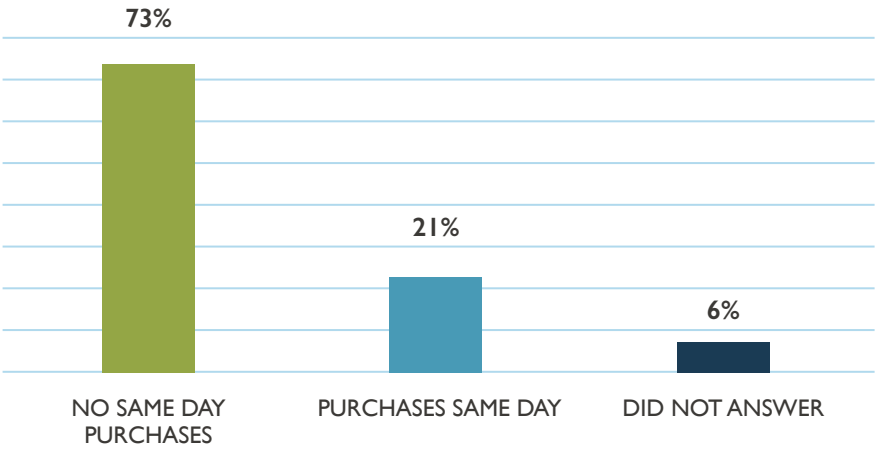
Section: Household Income/Crop Transaction Patterns

Data points to look out for: An interesting insight that can come out of the household income survey section and crop transaction patterns is where and when farmers are selling their crops. Farmers may need to make immediate expenditures after selling or they may have time before needing to buy additional inputs, school supplies or other household needs.

Relevance to DFS implementation: When a farmer is paid for their crops, this is the point when they are likely to have the most money in their accounts before going to cash-out. **Programs can use the data from the income and transaction pattern section to map where potential digital payment use cases may meet the demand of a farmer to make immediate purchases** while these funds are still within their mobile wallet and before they go to cash out.

Uganda Example: In Uganda, there was little need for same-day purchases, which meant the focus for digital payment use cases stayed on the top household expenditures.

1.2 Purchasing Needs Following Crop Sales



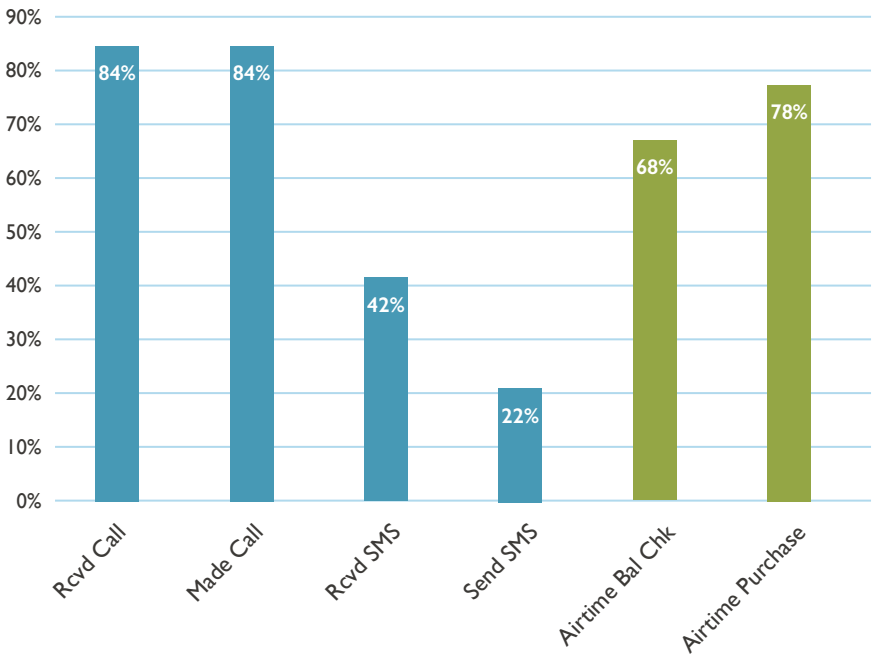
Section: Mobile Phone Ownership

Data points to look out for: There are two interesting data points that Feed the Future programs should keep their eyes on from this section: how smallholders purchase airtime and the different ways smallholders use their phones.

Relevance to DFS implementation: Understanding the airtime purchasing power of a population can be valuable for a mobile network operator, giving insight into how digitally literate or well-versed in mobile money a smallholder is. If it is buying airtime with mobile money, this population is likely to be fairly active in the mobile money ecosystem already, keeping a balance of money on a mobile wallet to make purchases. **Having an understanding of mobile phone usage can help a program infer whether or not the target population has enough digital literacy to receive financial services via the mobile channel.**

Uganda Example: In Uganda, 37% of the respondents reported using mobile money to purchase airtime, while the rest were still using scratch cards. At the time of this survey, this indicated that parts of the population were already using mobile money on a more sophisticated level. In addition, it was found that over 65% of the respondents to the survey conducted airtime balance check and top-up operations on their phone via USSD or SMS, which indicated a relatively high level of digital literacy. To note, since the administration of the survey, scratch cards are no longer in use and no longer produced by MNOs; all airtime purchase is done using mobile money.

1.3 Mobile Device Usage & Airtime Purchase Patterns



These require greater mobile device literacy and the use of numbers

Section: Financial Services

Data points to look out for: In this section, users should look for 1) whether smallholders have accounts at a bank, SACCO (savings and loan cooperative) or microfinance institution and 2) what the borrowing frequency is (either informally through VSLAs or more formal credit options).

Relevance to DFS implementation: Bank account penetration is an important metric of financial inclusion that is often not tracked. It can also be used to determine **whether a program should focus on encouraging farmers to open accounts in formal financial institutions, and what digital channels can enable more convenient services outside of traditional bank branches,** which are typically located at some distance from rural populations.

For the second data point, mapping out more or less frequent borrowers can help segment which smallholders may be more interested in credit products and which may benefit from a savings product.

Uganda Example: In Uganda, while farmers were aware of bank and SACCO offerings, the majority did not have an account at either. Mobile money account ownership was higher, which helped prompt a decision that mobile money accounts may be a better product for the program to promote among smallholders.

Section: Mobile Money Adoption

Data points to look out for: An important data point to look out for is the distance traveled to reach the nearest mobile money agent.

Relevance to DFS implementation: Mobile money agent networks, while more expansive than bank branches, still lack rural presence in many markets. **Agent coverage and location relative to smallholders can help determine whether or not it's reasonable to ask them to accept mobile money as a means of payment.** It also can help determine rural demand for mobile money agent services, which can be communicated to a mobile money provider to encourage them to expand their reach.

Uganda Example: In Uganda it was discovered that over 50% of the respondents lived an hour or more away from the nearest agent. This resulted in both programs determining that using mobile money as a means of payment could be challenging for many smallholder farmers.

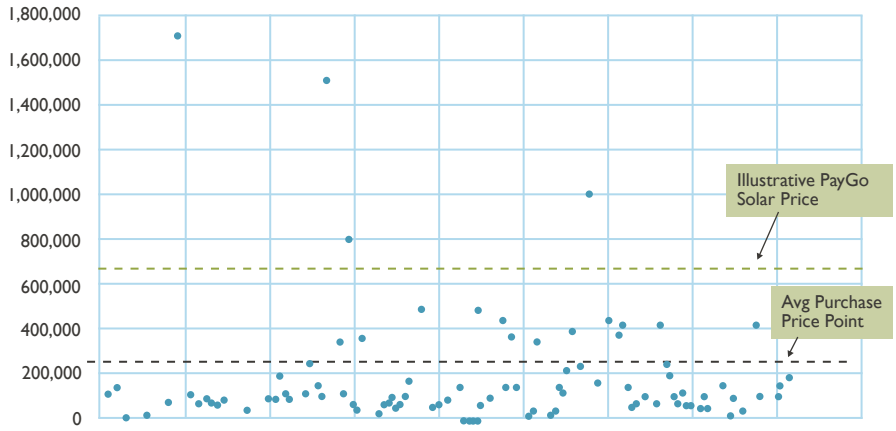
Section: Solar Products and Services

Data points to look out for: An interesting data point that comes out of this section is on pricing, or what smallholders are willing to or do pay for their solar home systems.

Relevance to DFS implementation: Having an understanding of pricing can help determine whether a PayGo solar home system is affordable and viable in a specific market segment. **If a household gets a PayGo solar home system, then they will need to use mobile money, which is an expanded DFS use case.**

Uganda Example: In Uganda, it was discovered that smallholders were finding very cheap solar energy product alternatives, and the particular population both AHCA and YLA were working with would likely not be able to afford or want to purchase a PayGo solar home system.

1.4 Solar Product Consumption Among Smallholder Farmers



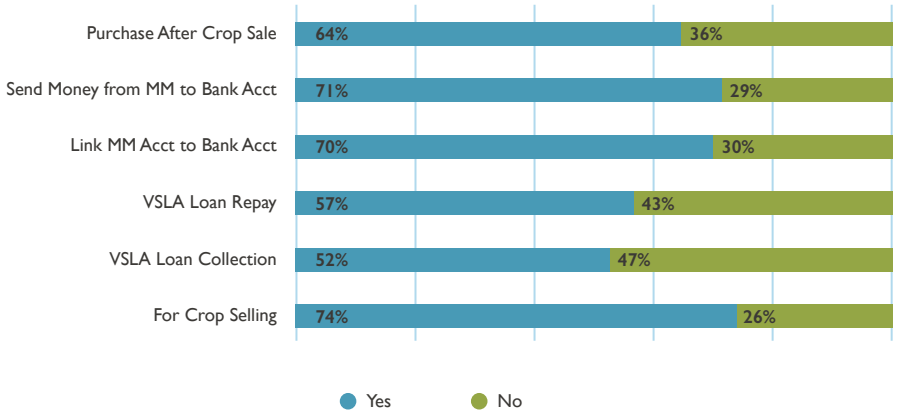
Section: Expanding Mobile Money Usage

Data points to look out for: A data point that should be closely examined from this section is the willingness respondents had to use mobile money across a wide variety of use cases, such as VSLA loan repayment or crop selling.

Relevance to DFS implementation: Measuring willingness is not a guarantee that adoption of new services will occur, but it can be a barometer of which new use cases for mobile money resonate with smallholders and which ones are too far afield to consider. Having this data can contribute to decision making on the types of mobile money use cases a Feed the Future program decides to engage with.

Uganda Example: In Uganda, smallholders were relatively open to using mobile money for a variety of transactions, including receiving payment for crops (74%). Other popular transactions types were linking mobile money to bank accounts and paying loans at their VSLAs. This indicated that working with smallholders to digitize crop payments was a potential avenue to explore.

1.5 Willingness to Use Mobile Money in New Ways



TOOL #2: DEVELOPING A RURAL DFS STIMULATION CAMPAIGN

OBJECTIVES

This tool is designed to build the confidence and capability of rural residents to use DFS products independently to meet a variety of financial, payments, or money transfer needs.

Feed the Future implementing partners will need to build the capacity of their field staff or that of public or private sector rural extension services officers involved in agriculture, health, or education to deliver DFS-specific training. They will also need to assess how engaged and active DFS providers are in geographic areas where they are operating or will operate. Further, implementers will need to coordinate with relevant private sector providers to expose program participants to relevant product demonstrations (i.e. mobile money or PayGo solar) to allow for "hands-on" product experience and direct contact with local sales representatives.

BACKGROUND AND IMPETUS

The challenges facing rural populations vis-à-vis enrolling and actively using DFS have been well-documented. Low account registration and restricted use, mostly money transfer and cash-in/cash-out operations are frequently cited as indications that DFS may not take root easily among this customer segment.

Service providers face higher costs of acquiring customers and basic infrastructure—power, roads, mobile connectivity—is less reliable. Rural customers often do not exhibit the same level of formal literacy or numeracy as urban customers where education levels are higher, their access and exposure to digital solutions is more restricted, and the capacity to use mobile devices is not as developed.

While these challenges do exist, rural populations are not beyond reach. Feed the Future implementing partners can develop campaigns to stimulate capacity and confidence to use DFS that is relevant to their daily financial lives. This is achieved through training models tailored to the unique conditions and needs of rural communities and creating partnerships that leverage existing priorities and activities of DFS providers. These campaigns can be designed based off of tailored market intelligence gathered by using the survey described in Tool #1. In particular, implementing partners responsible for strengthening rural extension services are uniquely positioned to launch such campaigns in coordination with relevant private and public sector partners.

DESIGN & KEY ELEMENTS: ESTABLISHING CAMPAIGN PARAMETERS

Implementing partners will want to develop a strategic vision document that articulates a) what this campaign seeks to achieve, b) who the campaign is targeting and where, c) which parties are involved in its implementation, and d) what the timing and sequence of key activities will be. They will also want to be aware of several considerations that will help define the campaign parameters. Click hyperlink here to see example from Uganda.

CONSIDERATION #1

The first and most important consideration is whether DFS providers are prioritizing expansion into peri-urban and rural areas where Feed the Future programs exist. If they are not actively marketing their services or seeking to acquire rural customers, agents or merchants in these areas, there won't be an adequate base of commercial activity to build upon. Therefore, the campaign won't have much to stimulate.

CONSIDERATION #2

The second consideration relates to how best to disseminate campaign content in rural, less accessible areas. Direct engagement through small group trainings is required to properly implement campaign activities and will also be the most time- and labor-intensive dissemination method. If implementing partners have relationships with community-based organizations (i.e. VSLAs, cooperatives, or associations) or have a mandate to develop such organizations, these groups may provide an additional, trusted channel for reaching and

mobilizing rural populations. In terms of traditional media channels, radio typically provides access to the largest and broadest audience base. Messages can be delivered between evening programs when listenership is highest. Or, implementing partners can weigh the possibility of participating in farmer call-in shows. Click here for hyperlink to Uganda example of radio messaging/Q&A content. Seasonally recurring or special events (i.e. major market days, sporting contest, etc.) offer additional ways to disseminate core messages to build basic awareness that can reach an even wider audience beyond Feed the Future program participants. As implementing partners identify what the appropriate distribution mix should be, this will further refine decisions around budget and staffing resources.

CONSIDERATION #3

The third consideration has to do with identifying what the internal staffing needs and corresponding roles and responsibilities will be for the USAID implementer. At a minimum, management and staff from multiple units will be involved at the Field Office level (i.e. Programs, Finance, M&E). It is also recommended that Country Office management be engaged if the necessary planning and resource allocation decisions do not reside at the Field Office level. There may also be a need and a role for involvement from the Head Office.

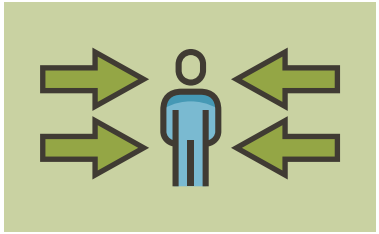
CONSIDERATION #4

The fourth consideration is validating which external partners are necessary to include in the campaign. DFS providers, such as MNOs with a mobile money service offering or a bank, MFI, or SACCO with a mobile application, have a clear role to play and securing buy-in and field level participation will require engagement at the Head Office level as well as building contacts at the regional and district levels to ensure timely communication and coordination. Depending on the country and market offerings, additional service providers, such as solar energy companies, could be worth including. These trainings offer greater exposure for rural residents to new products and services as well as aggregate potential customers for local representatives to more efficiently conduct sales and marketing activities. With respect to public sector involvement, in some countries the national government has a strong, well-established role vis-à-vis delivering and supervising rural extension services. Depending on how the USAID implementer is supporting or strengthening these networks, certain ministries such as agriculture or health may need to be consulted. Depending on the capacity and reach of these networks, they could represent an additional distribution channel for campaign content.

PREPARATION

The lists below identify decisions or actions implementing partners will need to take before actual campaign activities can begin. Preparation may have both internal and external-facing elements. Depending on the number and type of external partners involved in the campaign, implementing partners should expect that this stage might take up to one month to complete. Implementers will also want to consider whether and which types of digital tools might be deployed to support information collection at various stages along the campaign. This will vary based on several factors, including but not limited to: staffing capacity, availability of necessary software and hardware, reliable energy supply and other basic operational requirements, as well as potential risks associated with field staff traveling in remote areas with devices that may draw undue attention or encourage theft, etc.

Internal to USAID Implementer:

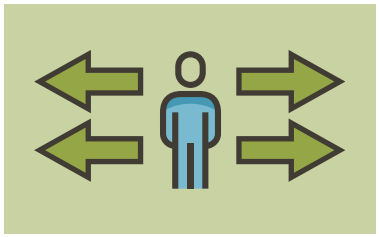


- Secure buy-in and approval for campaign strategic vision with relevant senior management
- Confirm staffing requirements and level of effort projections to ensure annual budgets can support additional DFS-specific activities for field staff typically assigned to agri-extension related work
- Draft training wave modules, including a program schedule, facilitation guide and group exercises
- Develop a pre-/post-training questionnaire for the first training to further refine content
- Develop a framework for collecting updates from training attendees

between trainings around key indicators such as: number of handsets, number of DFS accounts, type of DFS operations

- Evaluate the feasibility and merits of developing a unique database for storage and analysis purposes or adding to an existing database
- Ensure that data collection, storage, and usage policies or practices, such as those related to personal privacy and protection, adhere to relevant national and international laws and regulations.
- Develop an illustration schedule and commission a local artist(s) to develop visual images to support training presentations and group exercises
- Test-in and refine training modules with field staff and managers

External to USAID Implementer:



- Validate willingness and capacity of private sector players to participate in campaign activities
- Circulate strategic vision and identify relevant points of contact at the regional and district level
- Circulate field activity schedule with adequate advance notice to allow regional managers and district representatives to build training participation into their weekly schedules

EXECUTION

The rural campaign is organized into multiple training waves, with each wave covering a specific set of topics that build on one another. The intent of this design is to work up to discussions and practical exercises focused on DFS after introducing more familiar concepts and activities such as saving and borrowing or using a mobile phone to receive or make calls. While the exact field activity schedule will have to account for weather, seasonal farming activities, and other considerations, the campaign can be expected to last anywhere from two to four months. With respect to data and information collected throughout the campaign, the implementer will want to weigh the merits of digital versus analog collection tools. Depending on several factors--staffing capacity, availability of hardware and software, safety and security of personnel traveling with perceived "valuables", reliable power supply, etc.--it may be necessary to source raw information with analog tools and later convert them into a digital format that can be centralized, stored, and analyzed. Should this data become digitized, the implementer will also want to ensure adherence to all relevant national and international laws and guidance related to the privacy and protection of personally identifiable information (PII).

WAVE 1: FINANCIAL LITERACY WITH A MOBILE MONEY TWIST

Wave 1 opens the campaign with an interactive conversation about a rural household, its farming practices, income and expenditure patterns, potential needs and aspirations, and the different ways the household manages its finances. It concludes by introducing the idea that the mobile phone can be relevant for rural households as they think about how to plan and pay for important expenses. Click here for a hyperlink to the Wave 1 Module

WAVE 2: MOBILE MONEY DEEP DIVE

Wave 2 takes up the idea that the mobile handset can be used for more than just calling or messaging. It then seeks to build understanding and improve the ability of trainees to use mobile handsets for a wide range of things that are not directly related to DFS. Having demonstrated new ways to use mobile handsets, the training pivots to the concept of DFS and concludes with a detailed description of what it is, how it works, and why it can serve as an alternative way to conduct transactions that, currently, may be inconvenient, frustrating or costly for trainees (e.g. paying school fees at a bank branch). Click here for a hyperlink to the Wave 2 Module

WAVE 3: BUILDING A DFS DEMONSTRATION PLOT

Wave 3 closes the campaign with a highly interactive session that relies on skit performances and role playing around several rural DFS use cases. Similar to the concept of a "demonstration plot" in agricultural development programs seeking

to transfer knowledge and encourage new or different farming practices, this wave seeks to create a controlled environment where farmers can experience and observe DFS on a practical level involving scenarios that are familiar and relevant to them. These use cases should be identified over the course of the first two waves and draw on existing knowledge among local staff or partners regarding what the biggest challenges are for rural communities vis-à-vis accessing or using financial services, payments services, or money transfer services. Each skit will depict the different steps involved and what might be said. Each skit will have two versions: one where DFS works without issue or incident and one where there is a problem. The session concludes with trainees performing the skits back to the facilitators to demonstrate that the steps and overall process have been absorbed. Click here for a hyperlink to the Wave 3 Module.

EXAMPLES FROM UGANDA

In March of 2018, the Alur Highlands Coffee Alliance (AHCA) launched a rural campaign focused on stimulating the use of DFS and solar energy products among smallholder coffee farmers living in the West Nile region. AHCA was a five year Feed the Future activity (2013-2018) managed by Palladium that engaged a network of 16,000 smallholder coffee farmers and closed in September of 2018. Collaboration with SIA and NetHope began in the final two years of its program lifecycle.

AHCA's primary mandate was to strengthen coffee production at the household level through the introduction of better farming practices and increasing market linkages between coffee producers and buyers by organizing smallholder farmers into groups with a designated lead farmer to improve harvest sourcing in remote areas. AHCA's mandate also included an access to finance component, which led to program activities designed to strengthen or establish village savings and loan associations (VSLAs) in its operating area.

CAMPAIGN DESIGN & KEY ELEMENTS

Based on the application of Tool #1 described above, AHCA believed a rural campaign to stimulate both DFS and solar product usage had merit. The rural campaign design and implementation brought together Palladium management and staff from its regional field office (Programs, Finance, M&E) as well as senior management from its Head Office. AHCA regional office leadership proposed to build the capacity of its Junior Agricultural Field Officers or JAFOs to deliver these DFS-specific training waves. JAFOs were originally responsible for providing agri-extension services, managing lead farmer groups, engaging with VSLAs, and providing additional community engagement. As a result, AHCA program leadership felt they had the necessary language skills, relationships, credibility, and understanding of these local communities to lead the trainings and point out opportunities to strengthen training content or techniques as the campaign progressed.

AHCA also engaged with several private sector players from the DFS and solar energy sectors, including two MNOs (MTN and Airtel), and at least three solar companies (Fenix Intl, M-KOPA, and Village Energy). Both MTN and Airtel confirmed that they had explicit rural expansion targets as part of their Mobile Money Unit's commercial key performance indicators (KPIs). This included increasing enrollment of rural customers, agents, and merchants as well as increasing merchant purchase transactions. Relationships and contacts were made at three levels within each provider: head office, regional management, and territory or district representative. Airtel and MTN were also willing to connect AHCA program staff with regional and territory representatives and provide instructions to them to add these rural campaign training sessions to their weekly activity schedules.

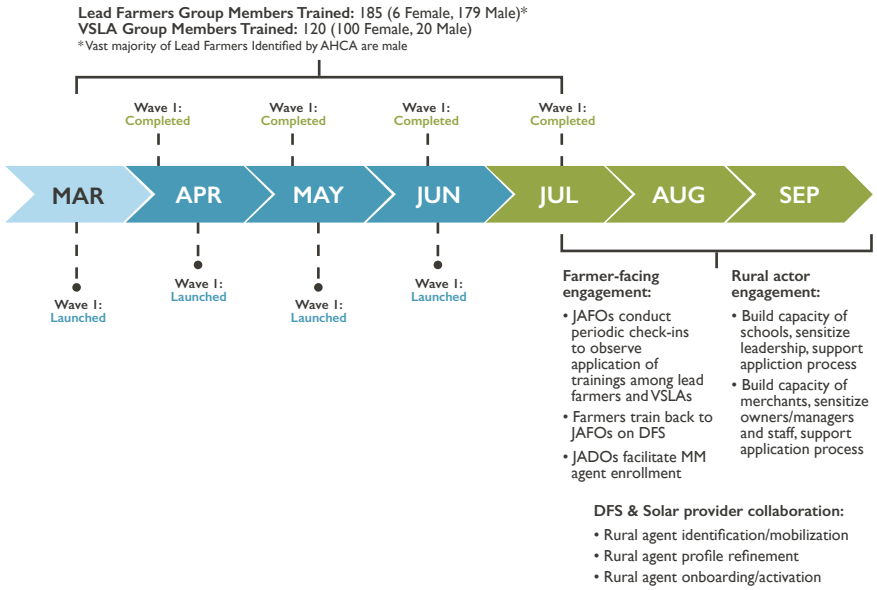
PREPARATION, EXECUTION & KEY TAKEAWAYS

Prior to the rural campaign kick-off, a week-long Training of Trainers (ToT) program was developed for the JAFOs, which included two days of content presentation and group activities, an internal dry-run, and observation of a live training. AHCA commissioned illustrations from a local artist to support the storytelling-style presentation of the first two training waves. They also drafted radio campaign slogans to be broadcast from two regional stations as well as some Q&A content to support AHCA management and JAFOs when participating as guests on a weekly farmer call-in talk show. Regarding data and information collection, AHCA proposed the use of analog tools, which were then entered into a digital database in MS Excel. AHCA did use a digital platform for geospatial mapping and tracking plot-specific information and metrics around coffee production. However, this platform was not designed with a survey questionnaire feature that could easily or rapidly customized for campaign use. Rather than introduce a new digital software tool alongside the DFS training

content, AHCA and SIA elected to focus on the DFS training content.

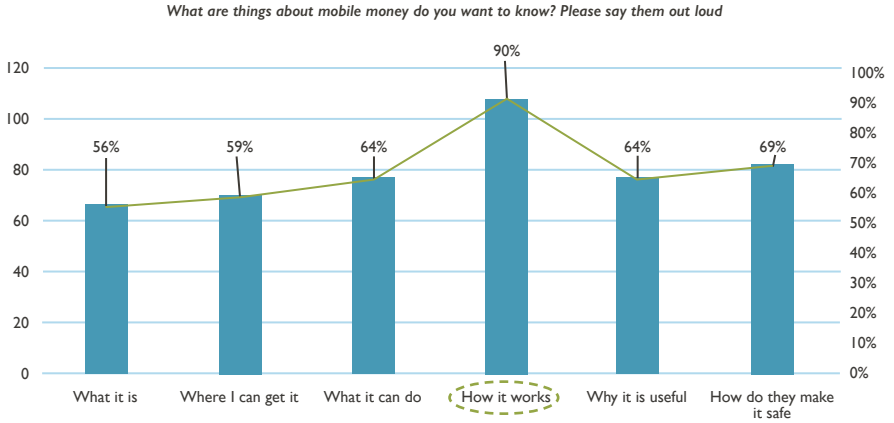
Over a four-month period, as the image below illustrates, JAFOs delivered trainings to approximately 300 AHCA affiliated smallholder farmers.

2.1 Rural Stimulation Campaign Implementation & Key Milestones



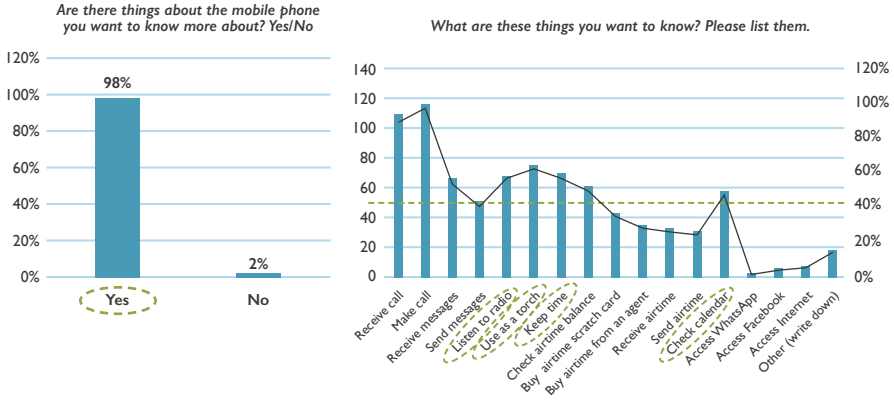
The dominant take-away from the first training wave was that the level of interest in how to use mobile phones in general was quite high as shown in the survey questionnaire administered pre-training.

2.2 Smallholder Farmer Interest in Mobile Technology



There was also considerable interest in mobile money broadly, but a particular interest around how it works.

2.2 Smallholder Farmer Interest in Mobile Money

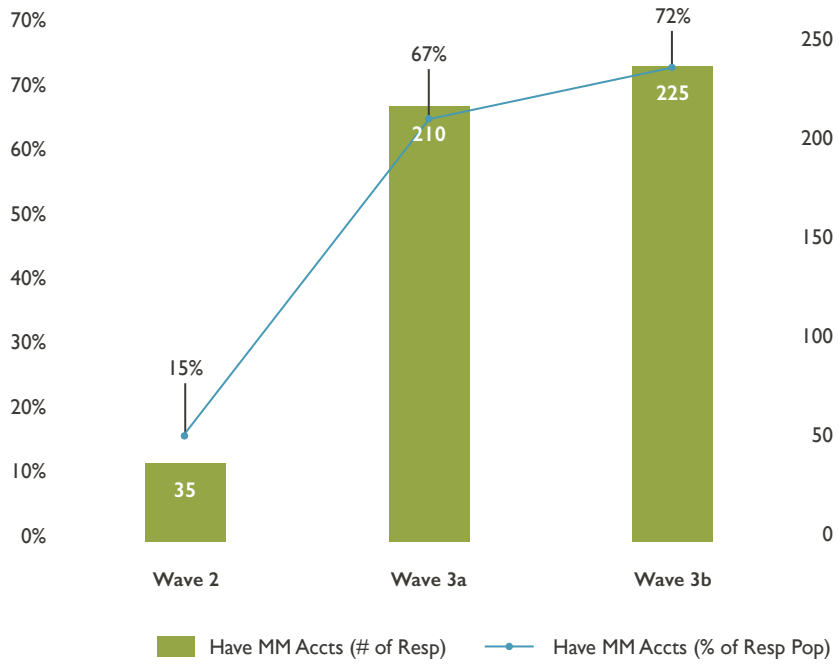


In the second and third training waves, as shown below, AHCA observed a noticeable spike in mobile money account registration between the second and the third wave. The second training wave focused on explaining how to use the mobile phone for different functions, followed by an in-depth presentation of how mobile money works, what is required to use it (i.e. SIM card, mobile handset, mobile money account, cellular signal), where to use it, and what it costs.

Significantly, AHCA observed a nearly 50% increase in self-reported registration for mobile money accounts between the second training wave administered in mid- March and the start of the third training wave in mid-April. The third training wave was divided up into two parts 3a and 3b. Given the emphasis on skit presentations and the use of role-play to simulate eight distinct rural DFS use cases, JAFOs, AHCA management agreed that trainees would require two sessions.

2.3 Mobile Money Account Enrollment During Campaign Period

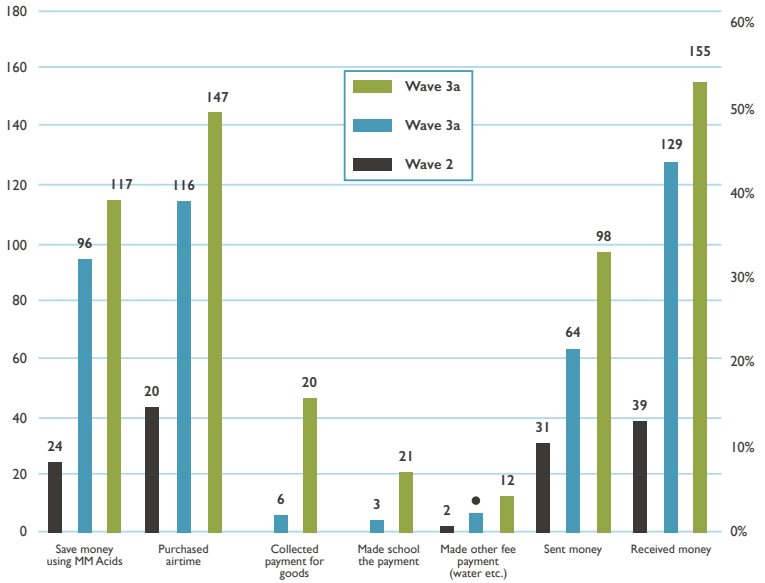
Mobile Money Account Status



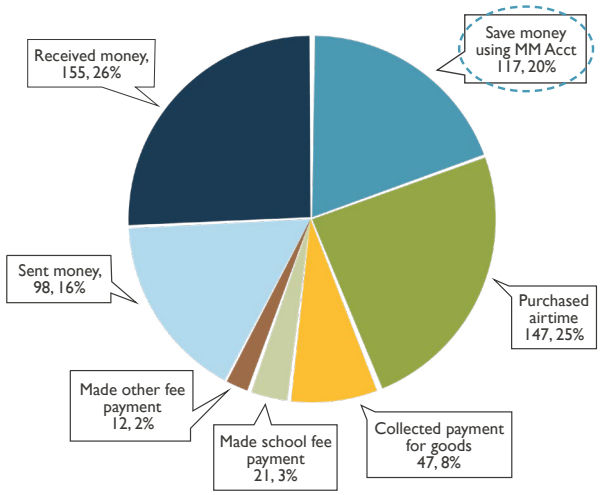
Each training session was spaced approximately one month apart, allowing AHCA to collect self-reported information over a three-month period from April to June regarding DFS activity. The two prominent takeaways from the graphics below are that the training population in absolute terms reported an increase in DFS activity and that there was a diversity of transaction types beyond cash-in/cash-out.

2.4 Reported Mobile Money Usage During the Campaign Period

Mobile Money Transactions. Waves 2, 3a, & 3b



Mobile Money Transactions: Wave 3b



TOOL #3: MAPPING & COSTING AGRI-ENTERPRISE PAYMENTS

OBJECTIVES

The purpose of this tool is threefold:

- Generate a visual representation of how an agri-enterprise makes specific types of payments (e.g. purchasing raw agricultural commodities from growers) so that a reader can easily identify what the key steps are in the process, who is involved, when they occur, and over what period;
- Generate estimates regarding the various costs associated with making payments using a cash-based method, which can be attributed to specific categories (i.e. labor, transport, transaction fees/charges) and phases (i.e. payment request and approval, payment initiation, or payment reconciliation).
- Develop an alternative scenario involving the use of DFS to allow for a comparative analysis and support strategic decision-making within a given enterprise regarding whether to digitize certain systems or processes.

BACKGROUND AND IMPETUS

As part of a broader value chain intervention approach, many implementing partners engage with agri-enterprises as local partners. These partnerships typically serve multiple purposes, which may include technical support around digitizing systems and processes—from accounting, finance, and HR to inventory management, procurement and logistics. In the case of agri-enterprises that trade in raw or processed agricultural commodities, cash-based bulk payments remain the dominant method for procuring outputs in many emerging markets.

Within the context of a broader digitization support package offered by an implementer, **agri-enterprise partners may have particular concerns regarding the impact of digitization on their current procurement methods. This is often due to the prevalence of cash leakages and a general lack of transparency once cash is in transit to rural buying points.** With the appropriate analytic framework and collection tools, implementers can undertake a targeted assessment of an agri-enterprise's cash-based seasonally recurring procurement activities to large, often geographically dispersed networks of producers. It also supports the development of alternative scenarios whereby DFS is integrated into the procurement process, likely in conjunction with other digital systems, to enable a comparison between cash-based and digital-based methods.

DESIGN & KEY CONSIDERATIONS: ESTABLISHING ASSESSMENT PARAMETERS

This assessment is designed to provide visibility into a key pillar of an agri-enterprise's operations—the procurement of raw agricultural commodities. The intended users of this tool are members of an implementer's Program Unit responsible for managing or providing technical assistance to agri-enterprise partners. The assessment serves multiple purposes for both the agri-enterprise and the implementer, namely:

1. Generates a process-level understanding of the agri-enterprise's procurement activities
2. Identifies and classifies costs associated with cash-based procurement
3. Surfaces strengths and weaknesses of the current procurement method from multiple vantage points within the agri-enterprise
4. Develops projections regarding how a digital alternative to cash-based procurement would impact an agri-enterprise from a costing as well as a process perspective
5. Creates a foundation from which to discuss options to digitize an agri-enterprise's operations

There are two primary components to the assessment—qualitative and quantitative—that **will require engagement with an agri-enterprise at different levels** (i.e. leadership, management and staff) and across multiple departments or units (i.e. Finance/Accounting, Extension Services, Warehousing/Processing). There is also an option to engage individual growers, but this may depend on the sensitivities of agri-enterprise leadership regarding that type

of outreach. Before developing the collection tools and mobilizing necessary staffing resources, implementers must first account for the considerations listed below to establish clear parameters for the assessment.

CONSIDERATION #1

The first consideration relates to awareness and engagement at the leadership level within the agri-enterprise. Implementers will want to ensure an internal champion has been identified who understands how the assessment will benefit the organization, how and where it will be conducted, as well as what kind of access to staff, sites, and information would be required. There could be sensitivities around examining how payments are done within the enterprise. **Implementers will want to request the internal champion to broadcast the relevance and importance of the assessment within the organization to encourage active and open participation.**

CONSIDERATION #2

The second consideration has to do with identifying the number and type of methods an agri-enterprise has for procuring agricultural commodities. For example, an agri-enterprise may buy from individual commercial farmers, organized producer organizations, or independent smallholder farmers. Depending on how and where these commodities are collected, it may process payments differently. If there are multiple methods, **implementers will want to consider the merits of focusing on one or more** of them as it will impact both the information collection and analysis phases of the assessment.

CONSIDERATION #3

The third consideration has to do with aligning with the agri-enterprise around a common understanding of where the payments process begins and ends. These businesses are simultaneously executing a wide range of operations and activities on a daily basis. They may not necessarily think about their procurement processes in isolation. **But, to develop a process map and undertake an activity-based costing analysis that estimates time and labor costs, the implementer will need to identify a discrete number of steps.** Provided this shared view is agreed to, it should make subsequent conversations easier regarding the results and recommendations from the analysis.

CONSIDERATION #4

The fourth consideration relates to the types offerings DFS providers have introduced, what the fees and other charges are associated with different operations and whether they have introduced an offering tailored to the needs of enterprise customers versus individual customers. Many DFS providers across sub-Saharan Africa and globally have launched enterprise payment solutions. These are effectively bulk payments mechanisms that allow a single institution to pay multiple recipients at one time. They are also typically priced differently than what the provider would charge an individual customer. **If there is an enterprise payments solution, the implementer will want to ensure they apply the appropriate fees.**

PREPARATION

The information required to complete these mapping and costing exercises will predominantly come from key informant interviews. In some cases, the agri-enterprise may agree to having FGDs with growers or field staff to generate a more holistic picture. **This tool is meant to stimulate a series of conversations around a specific activity pattern—payments—**to identify what the various steps are, who is involved, where these steps occur, when they occur, and approximately how long each step takes to complete.

The best way to prepare for this type of information collection is to familiarize oneself with the key topics that the conversation will want to touch on. Simulating these conversations with another team member can also help make the interviewer more comfortable with the delivery and sequencing of questions. It will not require a dry-run to test enumerator notation mechanics, ensure question skip logic is followed, or assess whether question wording would be properly understood by a respondent. Finally, the individual or team collecting this information will want to prepare the agri-enterprise in advance of these interactions. **A high-level preview of what these discussions are meant to achieve and what they will focus on should be provided to the internal champion** and any other key members of leadership or senior management. [Click here for a hyperlink to the costing analysis framework and here for the process mapping framework]

EXECUTION

There are four elements involved in executing this assessment. The first focuses on developing the process map for the existing cash-based payments that have been selected. The second element centers on identifying and quantifying relevant cost components associated with cash-based payments. The third involves building a scenario in which payments are made using DFS instead of cash and that process is both mapped and costed. The fourth seeks to support a comparative assessment of the two payments methods.

MAPPING THE CURRENT PAYMENTS PROCESS

The **process of mapping a specific payment stream or streams will be iterative.** A review of the first round of interview or focus group discussion notes may reveal gaps that will need to be filled through shorter, more targeted exchanges with specific interviewees. These can often happen via phone or email and may not require another in-person conversation. As information is collected within the agri-enterprise, a rough sketch will emerge. This sketch can be further defined and enhanced as more information comes in and as those tasked with the mapping begin to cross-reference information provided from different sources.

COSTING THE CURRENT PAYMENTS PROCESS

This element of the assessment follows an activity-based costing methodology, whereby individual steps within the payments process are attributed to specific staff and estimated durations are assigned to each step to arrive at an estimated cost of labor. There are multiple cost categories, from labor and transport costs to applicable fees or charges (i.e. bank transfers or cash withdrawal), and some of this information may not be readily available during the first round of conversations. As a result, calculating the costs incurred by an agri-enterprise when making these payments will also likely be iterative. Additionally, those tasked with costing the process may need to first develop several assumptions regarding labor rates for specific staffing levels or departments, transport costs, etc. and then validate them with the appropriate staff within the enterprise.

DEVELOPING AN ALTERNATIVE DFS SCENARIO

Once the process associated with the current cash-based payments method has been mapped, an alternative DFS scenario will be built alongside it. This scenario will also include a mapping and a costing component. The structure and format for documenting this information will be the same as in the current cash-based method. The content, too, will necessarily draw from the information already collected regarding the current cash-based method as it is unlikely that the alternative digital scenario will result in a series of steps that is entirely different. Rather, it will likely differ at specific points along the process and impact a specific department (e.g. Finance) or staffing level (i.e. office management or field staff).

DEVELOPING SCENARIO COMPARISON TABLES: CASH V. DFS

With the process maps and costing estimates prepared for both methods—cash-based and DFS-based—a series of comparison tables will be generated. These tables will serve to highlight findings related to both the process map and cost. With respect to mapping, these tables can identify whether the process becomes longer or shorter, which staff are impacted, and where in the process (i.e. requesting payment approval, paying growers, reviewing daily transaction records) these changes occur. With respect to costing, these tables can highlight not only differences in overall cost but also how the cost structure itself would shift if an agri-enterprise migrated to a DFS alternative.

EXAMPLES FROM UGANDA

In November of 2017, Youth Leadership in Agriculture (YLA) conducted a payments mapping and costing analysis of one its local agribusiness partners, Equator Seeds Ltd. (ESL). YLA is a five year Feed the Future activity (2015-2020) implemented by Chemonics International with the goal of working through Ugandan local partners, primarily agribusinesses, to identify and advance new approaches to integrate youth into the agriculture sector as producers, employees, and entrepreneurs.

Prior to YLA's engagement, ESL would procure seeds from producers on a contract farming basis and relied more on larger commercial farmers and farming cooperatives or associations. Seed would either be delivered to an ESL warehouse or ESL would dispatch an agronomist with a large truck to another

warehouse location where weighing and payment activities would take place. With support from YLA, ESL's leadership agreed to pilot a new procurement model that would allow ESL to more efficiently source seed from smallholder farmers that were not members of an association or cooperative. YLA proposed the creation of a network of community-based facilitators (CBFs), made up of youth and with a preference for women. With this model, ESL could expand its sourcing capability and increase its network of growers beyond its relationships with SACCOs or larger commercially oriented farmers. With CBFs playing the role of a last-mile rural aggregator, ESL could also benefit in terms of time and cost savings associated with working through coordinators that reside within the same villages as the seed growers. In this model, procurement of seed is coordinated between ESL agronomists and CBFs. It involves the transportation of large sums of cash to designated rural buying centers where seed harvests are inspected and weighed. Farmers then receive a single lump sum payment from ESL agronomists according to the terms of their contract.

ASSESSMENT DESIGN & KEY ELEMENTS

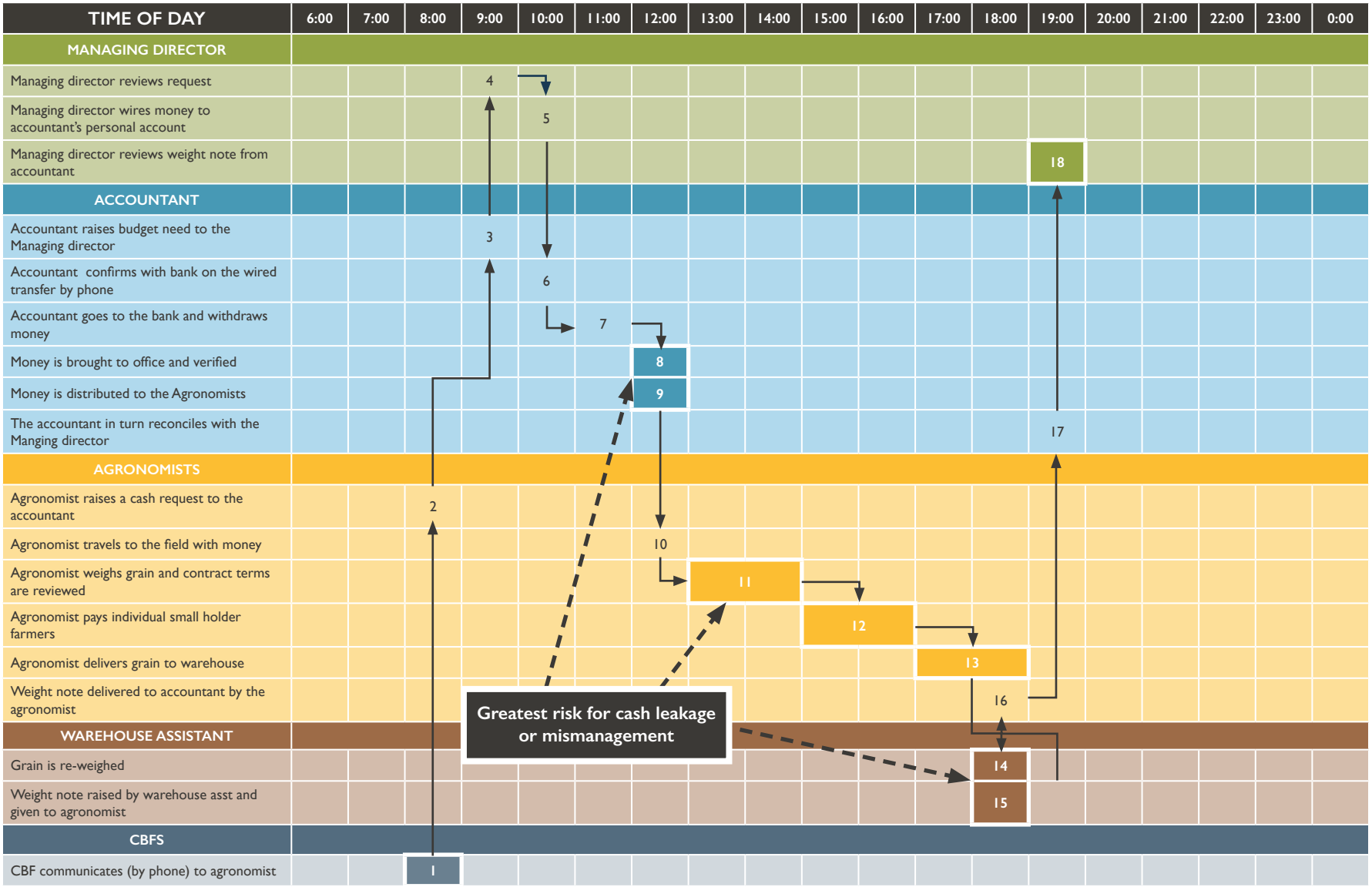
Based on results from the use of Tool #1 to gather market intelligence around smallholder farmers that sell to ESL via the CBF model, YLA felt that conditions were present to explore digitizing payments from ESL to these farmers. YLA proposed to conduct a mapping and costing assessment of two ESL payment streams: payments to cooperatives or associations and payments to CBF-affiliated smallholder farmers. YLA wanted to use the findings to inform discussions about digitizing payments to seed growers and digitization more broadly across the ESL organization. YLA had developed a close working relationship with ESL's CEO, who served as the internal champion for this exercise. The CEO agreed to the scope of the analysis and authorized YLA to engage with any ESL staff as well as with smallholder farmers. Key informant interview and focus groups were held at ESL's headquarters in Gulu and included agronomists, warehouse staff, as well as management from its Finance/Accounting and Trading/Retail Distribution units.

PREPARATION, EXECUTION & KEY TAKEAWAYS

In preparation or the initial round of information collection, YLA first confirmed the availability, features, and pricing of enterprise payments solutions offered by the two major DFS providers, MTN and Airtel. Both providers offer such a solution, with similar pricing structures. Following a briefing with ESL's CEO regarding the field collection schedule, he **took it upon himself to convene a company-wide meeting to emphasize his support for this assessment** and his expectation that any staff engaged would be responsive and forthcoming.

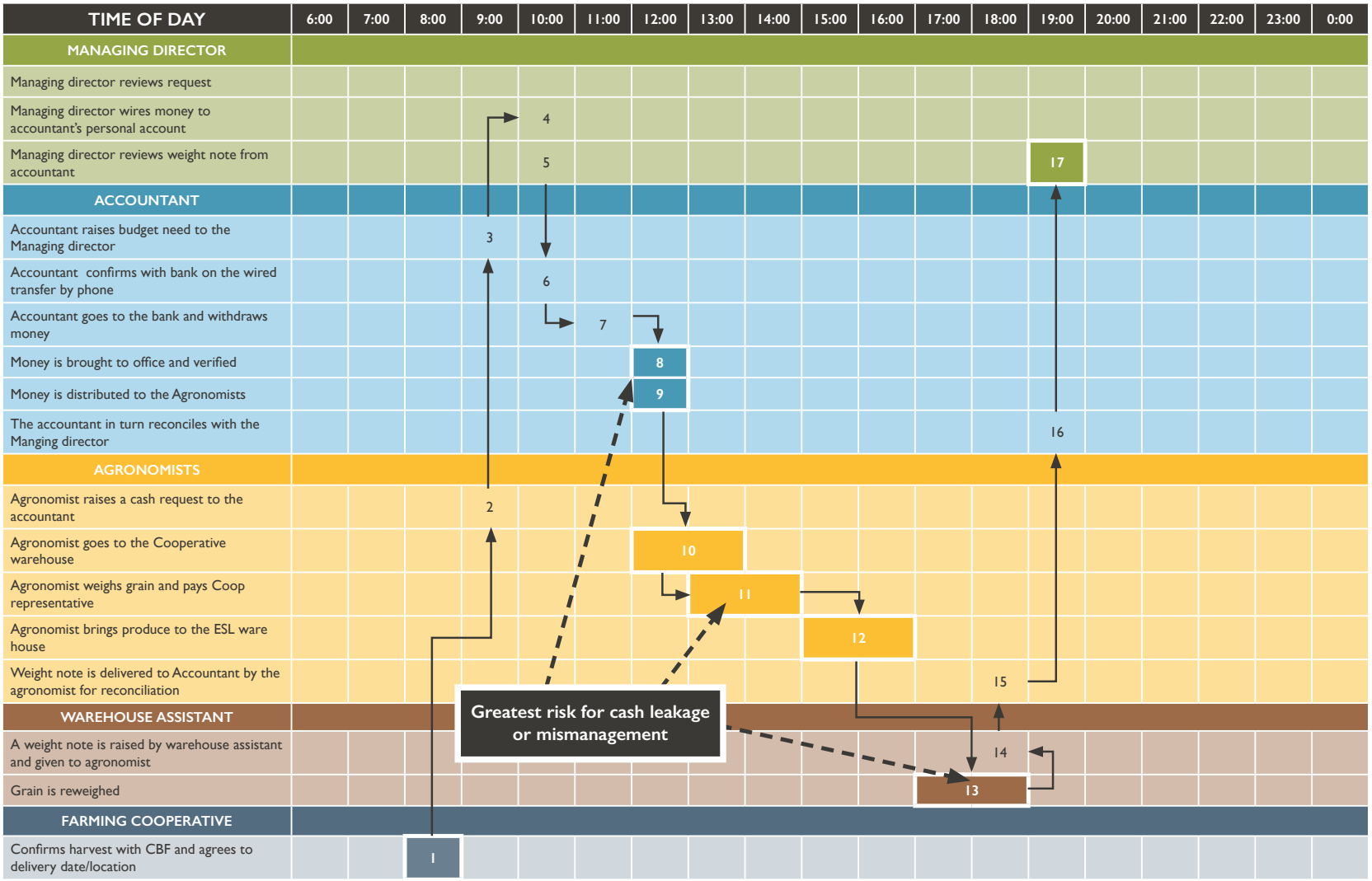
When conducting the mapping phase of the assessment, YLA observed a number of similarities between the two payment streams in terms of staffing, steps and sequencing. As figures 3.1 and 3.2 below indicate, ESL relies heavily on its network of agronomists and its accountant to execute the majority of steps involved. Both figures depict ESL payments processes, which has been mapped as individual activity steps attached to a specific person. The box outlined in green indicates the process start and the box outlined in red indicates the process end. Boxes outlined in yellow indicate steps where the risk for internal leakage or external fraud are elevated. Row colors correspond to specific people (i.e. Managing Director or Warehouse Assistant) involved in the process. Individual activities are described in the first column. The sequencing, timing and duration of each activity is depicted to the right of that column. Arrows indicate the process flow. Many activities take less than 30 minutes to execute but some require more time. Each cell indicates a 60 minute block. Some activities take more than 60 minutes. For example, step #11 in 3.1—agronomist weighs grand and contract terms or reviewed—takes about 2 hours to complete.

3.1 ESL Payments to Seed Farmers: CBF Method Using Cash



Both payment streams follow a similar sequencing. Cash is withdrawn by the accountant from a bank branch and then turned over to an agronomist. She or he assumes responsibility for making payments once deliveries have been inspected and weighed. The mapping also identifies specific steps where the potential for cash leakage or mismanagement was greatest. In both scenarios, when large sums of cash are accessible to more than one person or if one individual is alone in moving with cash, risk increases. This occurs when the accountant returns from the bank and is kept temporarily in the office or when cash is brought to a warehouse or collection site to be distributed.

3.2 ESL Payments to Seed Farmers: Coop Method Using Cash



When conducting the costing phase of the assessment, YLA observed that labor costs were comparable between the two payment streams despite differences in terms of where payments were made, and the amount of time required to complete comparable steps (e.g. weighing harvest deliveries). The labor costs analyses presented in figures 3.3 and 3.4 are organized using the same format. Each activity step is given a number in the first column. Each process step is described in the second column. The person responsible for executing the step is listed in the third column. The fourth and fifth columns present averages (measured in time or in value), which have been pulled from the costing analysis framework (refer to hyperlinks above to see access templates).

KEY POINTS

- Table shows **steps, staff, time** to execute, and average labor costs
- Assumes specific **hourly rate** for each staffing level
- Accountant and agronomists are more present in process
- Greatest potential for digitiation is in **cash mobiliation** before agronomist leaves

In both payment streams, similar opportunities for digitization were identified, which focused on steps taken by the account to mobilize the cash needed to process these payments.

3.3 Labor Cost Analysis: CBF Method

#	Process Steps	Responsible Staff	Avg Time to Execute (mins)	Avg Labor Cost/Step
1	CBF communicatesto agronomist on anticipated quantities in the field	CBF	7.50	$0.13
2	Agronomist raises a cash request to the accountant	Agronomist	7.50	$0.13
3	Accountant raises budget need to the Managing director	Accountant	22.50	$1.13
4	Managing director reviews request	Managing Director	22.50	$1.88
5	Managing director wires money to accountant's personal account	Managing Director	45	$3.75
6	Accountant confirms with bank on the wired transfer by phone	Accountant	37.50	$1.88
7	Accountant goes to the bank and withdraws money	Accountant	22.50	$1.13
8	Money is brought to office and verified	Accountant	20	$1.00
9	Money is distributed to the Agronomists	Accountant	15	$0.75
10	Agronomist travels to the field with money	Agronomist	75	$2.50
11	Agronomist weighs grain and reviews contracts with growers	Agronomist	120	$4.00
12	Agronomist pays individual growers	Agronomist	90	$3.00
13	Agronomist delivers grain to ESL warehouse	Agronomist	75	$2.50
14	Grain is reweighed at warehouse	Warehouse Assistant	90	$1.50
15	Weight note is raised by warehouse assistant and given to agronomist	Warehouse Assistant	15	$0.50
16	Weight note is delivered to accountant by the agronomist	Agronomist	7.50	$0.13
17	The accountant in turn reconciles with the Managing Director	Accountant	7.50	$0.38
18	Managing Director reviews weight note from Accountant	Managing Director	12.50	$1.04
		TOTAL (MINS)	692.50	
		TOTAL (HRS)	11.54	
		TOTAL USD		$27.29

GREATEST EFFICIENY GAINS THROUGH DIGITIZATION

3.4 Labor Cost Analysis: Cooperative Method

#	Process Steps	Responsible Staff	Avg Time to Execute (mins)	Avg Labor Cost/Step
1	Coop communicates to agronomist on anticipated quantities	Agronomist	7.50	$0.13
2	Agronomist raises a request to the accountant	Agronomist	7.50	$0.13
3	Accountant raises budget need to the Managing director	Accountant	22.50	$1.13
4	Managing director reviews request	Managing Director	22.50	$1.88
5	Managing director wires money to accountant's personal account	Managing Director	45	$3.75
6	Accountant confirms with bank on the wired transfer by phone	Accountant	37.50	$1.88
7	Accountant goes to the bank and withdraws money	Accountant	22.50	$1.13
8	Money is brought to office and verified	Accountant	20	$1.00
9	Money is distributed to the Agronomists	Accountant	15	$1.00
10	Agronomist goes to the cooperative warehouse	Agronomist	20	$2.50
11	Agronomist weighs grain and pays Coop representative	Agronomist	75	$4.50
12	Agronomist brings produce to the ESL warehouse	Agronomist	135	$2.50
13	Grain is reweighed at the warehouse	Warehouse Assistant	75	$2.25
14	Weight note is raised by warehouse assistant and given to agronomist	Warehouse Assistant	135	$0.50
15	Weight note is delivered to accountant by the agronomist	Agronomist	7.50	$0.42
16	The accountant in turn reconciles with the Managing director	Accountant	7.50	$0.75
17	Managing director reviews weight note from Accountant	Managing Director	12.50	$1.04
		TOTAL (MINS)	667.50	
		TOTAL (HRS)	11.13	
		TOTAL USD		$26.46

GREATEST EFFICIENY GAINS THROUGH DIGITIZATION

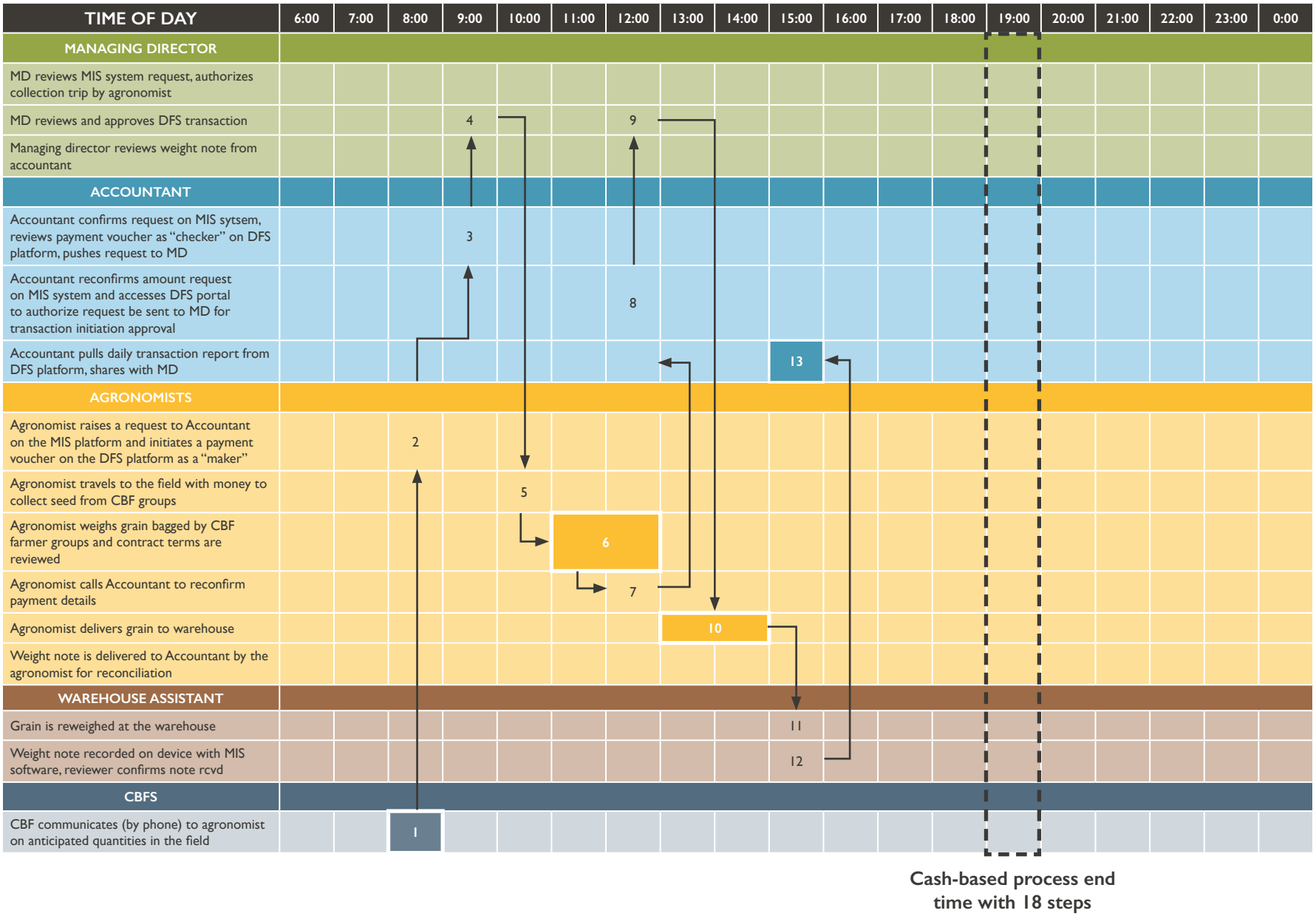
KEY POINTS

- Table shows **steps, staff, time** to execute, and average labor costs
- Staff involvement is **comparable to CBF model**
- Re-weighing at ESL warehouse is longer because of **presence of coop rep and 3rd party**
- Greatest potential for digitiation is in **cash mobiliation** before agronomist leaves for coop

With the mapping and costing phases completed for both cash-based payment streams, alternative DFS scenarios were developed. Figures 3.5 and 3.6 below present results specific to when mobile money is introduced into the payment process in the CBF model. To begin with, the process map shifts in a number of

There are fewer steps overall and certain steps can be executed more quickly. The accountant and agronomists continue to play important roles throughout. But their cash handling responsibilities are considerably reduced. Perhaps most important, the authority to approve and initiate payments rests with the Managing Director.

3.5 Process Map: CBF Model Using Mobile Money



The analysis also projects that a process with fewer steps that also takes less time has cost implications. The red outlined row in Figure 3.6 below indicate where specifically mobile money enters the process and which people interact with the service and for what purpose.

3.6 Labor Cost Analysis: CBF Model Using Mobile Money

#	Process Steps	Responsible Staff	Avg Time to Execute (mins)	Avg Labor Cost/Step
1	CBF communicates to agronomist on anticipated quantities	CBF	7.50	$0.13
2	Agronomist raises a request to Accountant on the MIS platform and initiates a payment voucher on the DFS platform as a "maker"	Agronomist	7.50	$0.13
3	Accountant confirms request on MIS sytsem, reviews payment voucher as "checker" on DFS platform, pushes request to MD	Accountant	22.50	$1.13
4	MD reviews MIS system request, authorizes collection trip	Managing Director	22.50	$1.88
5	Agronomist travels to field to collect seed from CBF groups	Agronomist	75	$1.25
6	Agronomist weighs grain and reviews contract terms	Agronomist	120	2.00
7	Agronomist calls Accountant to reconfirm payment details	Agronomist/ Accountant	22.50	$0.75
8	Accountant reconfirms request on MIS system, accesses DFS portal to authorize request to MD for transaction approval	Accountant	10	$0.50
9	MD reviews and approves DFS transaction	Managing Director	10	$0.83
10	Agronomist brings produce to ESL warehouse	Agronomist	90	$1.50
11	Grain is reweighed at the warehouse	Warehouse assistant	135	$2.25
12	Weight note is recorded on device, reviewer confirms note rcvd	Warehouse Assistant / Agronomist	15	$0.25
13	Accountant pulls daily transaction report from DFS e-wallet account dashboard, shares with MD	Warehouse Assistant / Agronomist Accountant	10	$0.50
		TOTAL (MINS)	547.50	
		TOTAL (HRS)	9.13	
		TOTAL USD		$13.08

KEY POINTS

- Use of mobile money and MIS can save time & costs associated with approval and processing steps
- Generates visibility into weighing in the field and at the warehouse in near real-time
- Managing Director initiates payment NOT Agronomist

Having generated the mapping and costing projections in the digital alternative scenario for payments in the CBF model, tables could then be created to provide a side-by-side comparison of the process when payments were made using cash or DFS. In Figure 3.7 the cash-based method is profiled on the left and the integration of mobile money on the right.

3.7 CBF Model Process Comparison: Cash v. Mobile Money

#	Process Steps	Responsible Staff	Avg Time to Execute (mins)	Avg Labor Cost/Step
1	CBF communicatesto agronomist on anticipated quantities in the field	CBF	7.50	$0.13
2	Agronomist raises a cash request to the accountant	Agronomist	7.50	$0.13
3	Accountant raises budget need to the Managing director	Accountant	22.50	$1.13
4	Managing director reviews request	Managing Director	22.50	$1.88
5	Managing director wires money to accountant's personal account	Managing Director	45	$3.75
6	Accountant confirms with bank on the wired transfer by phone	Accountant	37.50	$1.88
7	Accountant goes to the bank and withdraws money	Accountant	22.50	$1.13
8	Money is brought to office and verified	Accountant	20	$1.00
9	Money is distributed to the Agronomists	Accountant	15	$0.75
10	Agronomist travels to the field with money	Agronomist	75	$2.50
11	Agronomist weighs grain and reviews contracts with growers	Agronomist	120	$4.00
12	Agronomist pays individual growers	Agronomist	90	$3.00
13	Agronomist delivers grain to ESL warehouse	Agronomist	75	$2.50
14	Grain is reweighed at warehouse	Warehouse Assistant	90	$1.50
15	Weight note is raised by warehouse assistant and given to agronomist	Warehouse Assistant	15	$0.50
16	Weight note is delivered to accountant by the agronomist	Agronomist	7.50	$0.13
17	The accountant in turn reconciles with the Managing Director	Accountant	7.50	$0.38
18	Managing Director reviews weight note from Accountant	Managing Director	12.50	$1.04
		TOTAL (MINS)	692.50	
		TOTAL (HRS)	11.54	
		TOTAL USD		$27.29

#	Process Steps	Responsible Staff	Avg Time to Execute (mins)	Avg Labor Cost/Step
1	CBF communicates to agronomist on anticipated quantities	CBF	7.50	$0.13
2	Agronomist raises a request to Accountant on the MIS platform and initiates a payment voucher on the DFS platform as a "maker"	Agronomist	7.50	$0.13
3	Accountant confirms request on MIS sytsem, reviews payment voucher as "checker" on DFS platform, pushes request to MD	Accountant	22.50	$1.13
4	MD reviews MIS system request, authorizes collection trip	Managing Director	22.50	$1.88
5	Agronomist travels to field to collect seed from CBF groups	Agronomist	75	$1.25
6	Agronomist weighs grain and reviews contract terms	Agronomist	120	2.00
7	Agronomist calls Accountant to reconfirm payment details	Agronomist/ Accountant	22.50	$0.75
8	Accountant reconfirms request on MIS system, accesses DFS portal to authorize request to MD for transaction approval	Accountant	10	$0.50
9	MD reviews and approves DFS transaction	Managing Director	10	$0.83
10	Agronomist brings produce to ESL warehouse	Agronomist	90	$1.50
11	Grain is reweighed at the warehouse	Warehouse assistant	135	$2.25
12	Weight note is recorded on device, reviewer confirms note rcvd	Warehouse Assistant / Agronomist	15	$0.25
13	Accountant pulls daily transaction report from DFS e-wallet account dashboard, shares with MD	Warehouse Assistant / Agronomist Accountant	10	$0.50
		TOTAL (MINS)	547.50	
		TOTAL (HRS)	9.13	
		TOTAL USD		$13.08

GREATEST EFFICIENY GAINS THROUGH DIGITIZATION

As the graphic above shows, the process in the DFS scenario reduces the involvement of the accountant. Through additional digitization at other steps such as weighing and recording at the ESL warehouse, the process can be

further streamlined, which translates into savings in terms of time and labor costs. The analysis indicates that the total time to process a single payment reduces from 11.5 hours to 9 hours (a 2.5 hour time savings) and the cost to process that payment falls from ~$27 to $13 USD (a savings of $14).

Additional tables were generated to summarize topline findings focused on cost and time. With respect to the cost table depicted in Figure 3.8, it indicates labor and other categories of direct or indirect costs—such as labor, transportation, and payment fees/charges associated with the different payment methods—across both models (CBF and cooperative). Two types of payments fees/charges are specific to mobile money: bulk payments (what it costs an organization to initiate a payment) and cash-out (what it costs the recipient to convert electronic value into physical currency). The analysis also allows for a side-by-side comparison of different DFS providers (MTN and Airtel) in the event pricing structures differ considerably. As the analysis indicates, the costs of processing a single payment using mobile money are lower—by ~$30 usd—regardless of either the model or provider.

3.8 Executive Summary: Cost Expenditure

Cost Comparison: Single Seed Collection Event						
Direct & Indirect Costs	Current Cash Method (CBF Model)	Current Cash Method (Coop Model)	CBF Model with Mobile Money		Coop Model with Mobile Money	
			MTN	Airtel	MTN	Airtel
Labor Sub-Total	$27.29	$26.46	$13.08	$13.08	$12.99	$12.99
Transportation Sub-Total	$132.50	$132.50	$125.00	$125.00	$125.00	$125.00
Payment Fees/Charges	$11.00	$10.00				
Bulk Payment Fee			$0.11	$0.10	$0.11	$0.10
Cash-out Fee						
Additional Costs						
TOTAL COST	$170.79	$168.96	$138.19	$138.18	$138.09	$138.08
Delta (from current cash method) in USD	$170.79		$32.60	$32.61		
		$168.96			$30.86	$30.88

With respect to the time expenditure table, it is organized according to four phases identified along the payments process: initiation, approval, processing, and reconciliation. Calculations are run for each payments model (CBF versus cooperative) and method (cash-based versus DFS). As shown below in Figure 3.9, digitization offers a considerable time savings in both models, with greater savings taking place in the CBF model.

3.9 Executive Summary: Time Expenditure

Time Comparison: Single Seed Collection Event						
Time to Execute (Hrs)	Current Cash Method (CBF Model)	Current Cash Method (Coop Model)	CBF Model with Mobile Money		Coop Model with Mobile Money	
			MTN	Airtel	MTN	Airtel
Initiation	0.63	1.00	0.63	0.63	0.63	0.63
Approval	1.13	0.58	0.54	0.54	0.33	0.33
Processing	9.46	10.38	5.29	5.29	7.42	7.42
Reconciliation	0.33	0.48	0.42	0.42	0.58	0.58
TOTAL TIME	11.54	12.44	6.88	6.88	8.96	8.96
Delta (from current cash method) in USD	11.54		4.67	4.67		
		12.44			3.48	3.48

TOOL #4: MEASURING IMPACT THROUGH DFS INTEGRATION

BACKGROUND AND IMPETUS

The three previous tools have provided Feed the Future programs guidance on how to implement specific activities that integrate digital financial services. This tool will focus on how DFS more broadly can contribute to the Global Food Security Strategy (GFSS) overall objectives and expand the common definitions of access to finance typically used within Feed the Future programming. We will examine where DFS can link to the overall objectives of the GFSS (particularly objectives one and two).

WHO SHOULD USE THIS TOOL?

This tool has two primary audiences, USAID staff responsible for designing and monitoring Feed the Future activities and Feed the Future implementing partners. For example, this tool can be used to help Feed the Future programs design performance monitoring plans for the activities they are integrating DFS into, or USAID staff who are designing a project or activity and wish to incentive the integration of DFS. This guide will help support anyone interested in implementing more DFS in Feed the Future programs, as it helps make direct linkages to specific Feed the Future indicators and the broader overall objectives of the GFSS

HOW TO USE THIS TOOL

Based on Tool #1, this section will provide guidance on DFS performance. These indicators will then be linked to existing Feed the Future indicators and their impact will be mapped all the way up to the GFSS overall objectives. This guide should be used for ideas on the different ways the integration of DFS can be monitored and measured. Each suggested indicator has a roadmap that demonstrates how improving on them can bring a broader impact to the overall food security objectives.

The following indicators should be considered as a way to measure a program's progress in the use of DFS, and the results they have on broader program indicators and goals. Each indicator will have a definition, example activities, example results, and links to GFSS overall objectives/intermediate results the indicators are linked to.

DIGITAL READINESS

These indicators are meant to measure digital readiness among target smallholder farmer populations. In this case, the digital channel or form factor of focus is the mobile phone (basic and feature mobile phones).

Digital readiness can include several factors:

1. A person's ability to use the basic functions of a phone (making/receiving calls and SMS)
2. A person's ability to use more advanced features of a phone (feature phone apps, USSD menu navigation, digital airtime top-up)
3. A person's trust in the digital channel

- DR.1 Access to network coverage in their community
- DR.2 Ownership of a mobile phone(s)
- DR.3 Access to a mobile phone(s)
- DR.4 Use of mobile phone beyond making and receiving calls

FINANCIAL SERVICES

These indicators are meant to measure the extent to which smallholders are using a suite of financial services through a formal account, such as a mobile money or bank account.

- FS.1 Access to a formal account (bank/non-bank)
- FS.2 Use of that formal account to access savings services (formal/informal)
- FS.3 Use of that account to access weather-based index insurance
- FS.4 Use of that account to make payments for household expenditures and receive household income (agricultural/non-agricultural)

INDICATOR DEFINITIONS AND GUIDANCE

Below are the different suggested indicators along with guidance on how to use them.

DIGITAL READINESS INDICATORS

DR.1: Access to network coverage in their community

Definition (Description)	Example Activities	Example Results	GFSS Objectives Link
This indicator seeks to measure the number of smallholders within a target population that have network coverage in their communities and plots of land	• Baseline data on network coverage and demand for network coverage • Direct interfacing with mobile network operators to pitch levels of demand for coverage • Seek means of de-risking investment through grant mechanisms or a program like the Development Credit Authority (DCA)	• Mobile network operator invests in cell towers in key zones of influence • DCA bank partner lends to mobile network operator to expand network coverage • Increase in % of smallholders with network coverage	All Objectives and all intermediate results. Access to network coverage is a wide and cross-cutting indicator that will impact not only GFSS objectives and intermediate results, but others that have impact implications for health, education, economic growth and other sectors.

DR.2: Ownership of a mobile phone(s)

Definition (Description)	Example Activities	Example Results	GFSS Objectives Link
This indicator seeks to measure the number of smallholders that own a mobile phone and have at least one registered SIM in their name that is used with the mobile phone.	• Baseline data on network coverage and demand for mobile phones • Conduct rural stimulation campaigns to show value of phones • Work with village savings and loans groups to facilitate saving or lending for basic handsets • Work with mobile network operators to facilitate wholesale pricing	• Increase in a demand for network coverage, which supports investment in infrastructure supporting DR.1 results • Improved access to services via the mobile phone • Increase in the % of mobile phone ownership	All objectives and all intermediate results. Like network coverage, mobile phone ownership would be a wide and cross-cutting indicator that relates to how empowered smallholders are to gain access to more customized information (agricultural and nutrition related), linkages to markets, and access to tools that help strengthen their resilience to shocks.

DR.3: Access to a mobile phone(s)

Definition (Description)	Example Activities	Example Results	GFSS Objectives Link
This indicator seeks to measure access to mobile phones, which differs from ownership. Access to a mobile phone means that smallholders may have a phone in their family that is shared, but the SIM card is not registered in their name.	Conducting similar activities to the ones in DR.2 will bring greater access to mobile phones.	• Increase in a demand for network coverage, which supports investment in infrastructure supporting DR.1 results • Improved access to services via the mobile phone • Increase in the % of mobile phone ownership	All objectives and Objectives 1 and 2, all intermediate results. Like network coverage and mobile phone ownership, this indicator points to broader development implications beyond GFSS.

DR.4: Use of mobile phone(s) beyond making and receiving calls

Definition (Description)	Example Activities	Example Results	GFSS Objectives Link
This indicator seeks to measure how phones are being used. Simply making and receiving calls, for example, may indicate smallholders either do not know about the broader set of mobile services or may not have the digital literacy to know how to use these other services	• Rural stimulation campaign on alternative uses of mobile phones • Basic digital literacy capacity building amongst smallholders	• Increased capacity to use the mobile phone • Additional and relevant services (such as DFS) are able to be accessed and used by smallholders	All objectives and intermediate results. Like network coverage and mobile phone ownership/ access, this indicator points to broader development implications beyond GFSS.

FINANCIAL SERVICES INDICATORS

Smallholders typically do not have access to formal accounts from banks or other non-bank financial institutions (i.e. microfinance institutions, mobile money providers). According to CGAP's survey on smallholder farmers across six countries (Bangladesh, Cote d'Ivoire, Nigeria, Tanzania, Mozambique, and Uganda), only 30% of smallholders surveyed were financially included or had access to an account at a formal financial institution.8 The indicator below explores how and why Feed the Future programs should consider making this account ownership an indicator.

FS.1: Access to a formal account (bank/non-bank)

Definition (Description)	Example Activities	Example Results	GFSS Objectives Link
This indicator seeks to measure whether smallholders are registering for accounts with a formal service provider. An account can be defined as a deposit account in a bank, microfinance institution, or cooperative. It can also be defined as a stored value account in a mobile money wallet.	• Gather data for baseline on account ownership, helping to establish where there may be an opportunity for financial service providers • Rural stimulation campaigns to encourage enrolment in bank or non-bank (i.e. mobile money) account services • Organize account registration drives with partner financial service providers as part of the rural stimulation campaign • Partnerships with products or organizations that require the smallholder to open an account to receive payments or get access to services (i.e. pay as you go solar, digital school fees, input purchases)	• Increased capacity to use the mobile phone • Additional and relevant services (such as DFS) are able to be accessed and used by smallholders	Account access can lead to strengthened inclusive agricultural systems (IR 1) and strengthened and expanded access to markets and trade (IR 2) as smallholders and value chain partners can reduce transaction costs and improve transparency through digital payment via accounts. It can also be linked to improved proactive risk reduction (IR 5) and improved adaptation to recovery from shocks and stresses (IR 6) as accounts enable services such as weather-based index insurance to reach a broader population. Having an account also makes it easier for households to receive remittances from family and friends, which is a major contributor to household resilience.

8 http://www.cgap.org/sites/default/files/small_holders_data_portal/

Smallholders do save, yet they typically do so on a small scale and in less formal ways. Encouraging savings in more formal ways can open up new opportunities for smallholders, including access to better inputs and additional financial services beyond simple deposit accounts. An example of formal savings in an agricultural context can be found within the MyAgro model, which supports smallholders in Senegal, Mali, and Tanzania to make small layaway payments towards a savings goal that allows them to afford a package of inputs without taking on debt.

FS.2: Use of that formal account to access savings services (formal/informal)

Definition (Description)	Example Activities	Example Results	GFSS Objectives Link
This indicator seeks to measure whether smallholders are indeed using these accounts as a savings vehicle. Often times accounts may exist, but they carry a zero balance or are not seen as a means for savings.	• Partner with financial institution and input provider partner to work with smallholders on a savings for inputs product. Examples of this can be seen in the MyAgro model. • Encourage savings group digitization, working with them to put their savings into an account vs. in a lock box	• Increased savings amongst smallholder population • Improved access to inputs without taking out a loan, which increases both yield and household income • Improved savings can often lead to additional financial services such as access to credit.	Savings for specific agricultural needs, such as inputs, can help strengthen inclusive agricultural systems (IE2) and link smallholders to input markets (IR 2). Savings also contribute to a smallholder household's ability to adapt and recover from shocks (IR 6) as well as mitigate risk (IR5).

Access to insurance is extremely low for many smallholders. In Sub-Saharan Africa it is estimated that only 1% have access.9 Insurance can help reduce the external risks smallholders face and drive a more resilient food supply chain. This indicator is meant to encourage more direct work with weather-based index insurance. As the increasing quality of satellite imagery more accurately predicts yields and usage of digital payments becomes more widespread, services like mobile money make it easier for insurance companies to make more cost-effective payouts.

FS.3: Use of that account to access weather-based index insurance

Definition (Description)	Example Activities	Example Results	GFSS Objectives Link
This indicator examines both access to insurance and how account ownership is enabling that access. Weather-based index insurance is beginning to show promise as a viable way to deliver crop insurance products to smallholders. A primary reason these products are becoming more viable is the ability to digitally transfer pay outs directly to policy holders.	• Baseline survey of access to insurance products to understand the need • Support to index insurance products on customer acquisition through rural stimulation campaigns and other capacity building events hosted by the program • Support village agent/extension worker training of insurance messaging, to help smallholders better understand and trust products	• Increased number of smallholders with access to crop insurance via their accounts. • Improved ability to deal with shocks such as drought • Insurance helps open up access to credit, as it can bring down the risk of lending • Access to insurance can help improve yields through products that cover the cost of replanting if rainfall levels were insufficient	Insurance products most directly impact risk mitigation (IR 5) and recovery from shock (IR6), as they help smallholders protect themselves from external factors that might impact their yield. Insurance can also be responsible for increased employment by supporting new weather index insurance companies that need to hire local sales agents (IR 3) and strengthening inclusive agricultural systems by helping smallholders be more productive and profitable by reducing risk (IR 1)

Digital payments using an account have the potential to increase smallholder farmer participation in more formal and transparent supply chains. It can give them access to new suppliers and buyers along with the ability to pay or be paid remotely, which can also enhance direct relationships between smallholder farmers and their networks of buyers or input providers.

9 https://www.giz.de/de/downloads/giz-2016-en-innovations_and_emerging_trends-agricultural_insurance.pdf

FS.4: Use of that account to make payments for household expenditures and receive household income (agricultural/non-agricultural)

Definition (Description)	Example Activities	Example Results	GFSS Objectives Link
This indicator seeks to measure whether smallholder farmer household transactions (both incoming and outgoing) are using their digital accounts to process payments, via a mobile phone or other means (such as direct electronic transfer).	• Baseline survey of understanding of the use of existing accounts, assessing primary household income and expenditure • Support value chain partners in the digitization of crop payments to smallholders • Improve smallholder understanding of payment use cases for their accounts through the rural stimulation campaign • Support the digitization of smallholder expenditures such as food, agricultural inputs, school fees, or energy by partnering with service providers that support this kind of digitization and have a mandate and budget to educate smallholder farmers on the benefits	• Digital payments to accounts can help reduce transaction costs and open up more direct links to markets (buyers and input providers) • Digital payments can provide smallholders and agribusinesses more transparency to their historical sales, opening up the possibility of credit • Digital payments can enable access to services such as solar home system kits, real time school fee payments, and e-commerce (ordering inputs for example) that help save time and improve their productivity	Access to digital payments via an account can be directly linked to better access to markets (IR 2) by helping smallholders pay or be paid remotely, improved recovery from shocks (IR 6) through fast and real time access to remittances from family and friends, and strengthened agricultural systems (IR 1) by improving value chain transparency via digital transaction records

CONCLUSION

THE CASE FOR DIGITAL FINANCIAL SERVICES IN AGRICULTURAL DEVELOPMENT

Smallholder farming provides livelihoods for over 2 billion people around the world. Yet, the needs within smallholder households for a range of products and services remain largely unmet. The integration of new digital channels for transactions, information flows, data capture, and identity verification are shifting models for delivering financial services to traditionally under-served or excluded customer segments, especially rural customers.

The tools presented above are meant to help Feed the Future implementers explore where they can integrate mobile money, one type of DFS product, to deliver relevant and useful financial services to smallholder farmers and value chain partners they work with. Improved access to financial services can, in turn, help strengthen more inclusive agricultural value chains, improve the resilience of food systems to withstand shocks and risks, and boost production and income earning potential of smallholders, which is a key component to achieving greater rural self-reliance.

TOOLKIT KEY COMPONENTS AND TARGET AUDIENCE

The toolkit contains four tools meant to support the integration of DFS into Feed the Future programming. The toolkit assumes DFS integration is feasible and focuses on topics and issues related to designing and implementing specific activities within a Feed the Future context. It was developed for two primary audiences: 1) Implementing partners of USAID Feed the Future and other agricultural programs; 2) USAID Mission personnel.

USAID Implementing Partners – This toolkit focused on implementing partners that primarily engaged private sector and non-profit/non-governmental actors at a micro- or meso-level. Specifically, it targets Feed the Future implementing partners that work with farming populations via a lead farmer group or local association/ cooperative organizing principle and agri-enterprises engaged in supplying goods and services (e.g. inputs) to or sourcing, processing, and distributing outputs from farmers.

USAID Mission Personnel – This toolkit is primarily intended for use by USAID Mission personnel responsible for Feed the Future program creation and management. It provides specific examples of what kinds of DFS intervention activities can be integrated at different points in the program lifecycle, depending on desired purpose or effect.

The following table captures highlights for each tool, grouped into four categories—objectives, applicable skills/experience, relevant departments and staffing needs, and estimated level of event. These summaries are meant to provide a rapid, practical "at a glance" view for implementing partner leadership and management in-country. Prior experience co-developing and co-implementing these tools with implementing partners in Uganda has shown that—despite the merits and appeal of new approaches or techniques at a conceptual level—implementing partners need to feel confident that, operationally, they have visibility into how to plan for and manage any activities that may result.

Table 5.1 DFS Integration Guide: Tool Summary

Tool	Category	Description
Quantitative & Qualitative Survey Tool to Assess DFS Integration Potential	Objectives	• Understand access to and use of mobile phones and financial services • Identify rural household expenditure/income and transaction patterns • Assess feasibility of integrating DFS into activity programming
	Applicable Skills/ Experience	• Survey design, testing-in and enumeration • Database development • Data entry and analysis
	Relevant Departments & Staffing Needs	• M&E: Sr. Lead, Staff (1-3, depending on data entry needs) • Programs: Sr. Lead, Field Staff (4+, function of geographic scope and sample size)
	Estimated Level of Effort	• Survey Design/Testing-in: 2-3 weeks • Survey Enumeration: 2-6 weeks (function of geographic scope and sample size) • DB Development, Data Entry & Analysis: 2-3 weeks **Total: 6 – 12 weeks**

Tool	Category	Description
DFS Rural Stimulation Campaign	Objectives	• Develop the capacity and confidence of program populations to use DFS • Present content through interactive storytelling, group activities, and simulations • Communicate in clear, simple language how DFS works and why it is relevant for rural households
	Applicable Skills/ Experience	• Training curriculum development for rural audiences • Training facilitation • Group engagement
	Relevant Departments & Staffing Needs	• Programs: Sr. Lead, Field Staff (4+, function of geographic scope and sample size)
	Estimated Level of Effort	• Planning, Design, Material Development: 4-5 weeks (depending on need for local partners) • Implementation: 2-5 months (function of geographic scope and number of trainees) • Info/Data Collection: hours to develop the tools, less than 1 hour to collect, hours to aggregate and enter, hours to analyze **Total: 13 – 26 weeks**
Payments Mapping & Costing Assessment	Objectives	• Generate visual representations of payments processes • Estimate costs for processing payments in a cash-based method • Estimate costs for processing payments using digital alternatives • Compare processes and cost estimates to inform decision-making around potential systems digitization
	Applicable Skills/ Experience	• Quantitative and qualitative research • Experience with process documentation • Experience with activity-based costing analysis
	Relevant Departments & Staffing Needs	• M&E: Sr. Lead, Staff (1-3, depending on scope of data collection, entry, analysis needs) • Programs: Sr. Lead, Field Staff (with best local community exposure or relationships)
	Estimated Level of Effort	• Planning, Design, Tool Development: 1-2 weeks (depending on scope of mapping and costing) • Implementation: 1-2 months (function of how much to map and cost out and where info collection will take place) • Info/Data Collection, Entry & Analysis: 1-2 weeks
Measuring DFS Integration Impact on GFSS Objectives	Objectives	• Provide examples of key performance metrics to measure DFS impact • Provide guidance on how to link those metrics to broader Global Food Security Strategy (GFSS) objectives on economic growth and resilience
	Applicable Skills/ Experience	• Survey design, testing-in and enumeration • Database development • Data entry and analysis
	Relevant Departments & Staffing Needs	• M&E: Sr. Lead, Staff (1-3, depending on data entry needs) • Programs: Sr. Lead, Field Staff (4+, function of geographic scope and sample size)
	Estimated Level of Effort	• Survey Design/Testing-in: 2-3 weeks • Survey Enumeration: 2-6 weeks (function of geographic scope and sample size) • DB Development, Data Entry & Analysis: 2-3 weeks **Total: 6 – 12 weeks**